the magazine of STANDARDS

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JULY 1961

the magazine of STANDARDS

Standardization is dynamic, not static. It means not to stand still, but to move forward together.

Vol. 32 No. 7 JULY, 1961

FEATURES

NEWS

DEPARTMENTS

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Editor: Ruth E. Mason
Art and Production Editor: Margaret Lovely
Advertising Representative:
Irving Mallon, 7th Floor, 302 Fifth Avenue, New York 1, N. Y. (OXford 5-4759)

ASA

THE COVER: Three long strings of suspension insulators are shown in this picture of a construction at General Electric's Extra High Voltage Project in Pittsfield, Massachusetts. One of the strings of suspension insulators is shown being arced over by a spectacular lightning surge supplied by the surge generator inside the large dome.

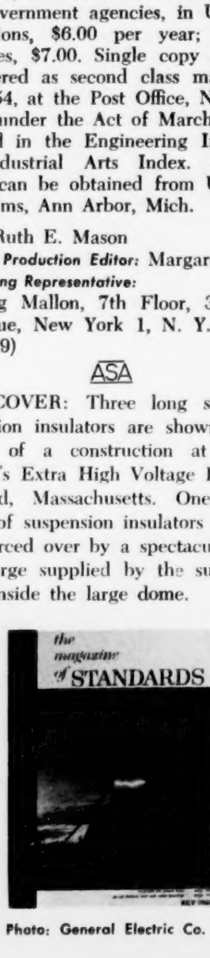


Photo: General Electric Co.

Last year some $769 million worth of ball and roller bearings were sold by bearing manufacturers in this country, according to H. O. Smith, secretary-manager, Anti-Friction Bearing Manufacturers Association. Mr Smith is secretary of Sectional Committee B3, Ball and Roller Bearings. Approximately $55 million of the total sales were made to customers in other countries.

notes

This sizable business points up the significance of AFBMA's work in sponsoring development of American Standards under ASA procedures and encouraging the U.S. bearing industry to cooperate in the development of international recommendations (see article, page 197). At the recent meetings of ISO Technical Committee 4 at Turin, Italy, the U.S. proposals were accepted with great interest, Mr Smith reports. An international identification code, accepted by 33 countries, is based on and is practically identical with the American Standard, B54.1-1960. A number of other international recommendations, already published, are also in agreement with American Standards in the B3 series such as tolerances, load ratings, and boundary dimensions.

Users throughout the world find these standards valuable in ordering bearings, Mr Smith points out.

• In his report on the new Pan American Standards program (see article page 207), John R. Townsend includes an enlightening comment by the head of Mexico's standards body. Mexico's industries are new and not saddled with old equipment, he said; therefore, they can adopt modern methods and modern equipment without the heavy expense involved in writing off the old.

On the other hand, a recent study indicates that in 1949 less than half the machine tools used by U.S. industry were more than 10 years old. By 1958, two-thirds were over that age and nearly a fifth were over 20 years old.

This Month's Standards Personality

J. R. Walgren

J. R. WALGREN, supervisor of the Engineering Standards Section of Aluminum Company of America, is a strong believer in the merits of company standardization and the value of ASA's Company Member Conference in promoting exchange of ideas in this field. Mr Walgren has been Alcoa's representative to CMC since 1950. He was a member of the CMC Administrative Committee from 1954-1956, and served as chairman of the committee in 1956. As CMC chairman at the Spring Meeting in Cleveland, 1956, Mr Walgren stated his views that executives can help relieve the shortage of technical manpower by promoting the use of national and company standards. "Many engineers in industry today are wasting time and money," he said. "They are wasting time in solving problems which have already been solved by national standards. They are wasting money by creating their own special solutions—specials cost more than standards." Mr Walgren maintains that the steady growth of CMC evidences the importance management is putting on standards at the company level.

Mr Walgren was graduated from Rensselaer Polytechnic Institute in 1935 with the degree of Mechanical Engineer. He was elected to associate membership in the honorary society of Sigma Xi early in his senior year and to full membership upon graduation. He worked at General Electric Company in Schenectady as a test engineer and technical writer from 1935-1937, moving on to Gleason Works in Rochester, New York, where he was first a gear engineer and then a sales engineer.

In 1942 Mr Walgren joined Alcoa's central Mechanical Engineering Division in Pittsburgh. His work has largely been standardization of tooling and equipment used in the smelting and fabrication of aluminum. In 1959 he was given his present assignment as supervisor of Alcoa's Engineering Standards Section.

Mr Walgren organized the Pittsburgh Section of the Standards Engineers Society in 1954, was a National Director of the Society from 1958-1960, and was general chairman of the SES Ninth Annual Meeting held in Pittsburgh in 1960.

For a number of years Mr Walgren made night classes at the University of Pittsburgh a hobby and finally put enough of them together in an orderly fashion to get a degree as Master of Science in Mechanical Engineering in 1954. He is also a registered Professional Engineer in Pennsylvania.

Mr Walgren's hobbies of skiing, tennis, and squash are designed to carry out his favorite theme of regular exercise through individual sports—an interest shared by his wife and two sons.

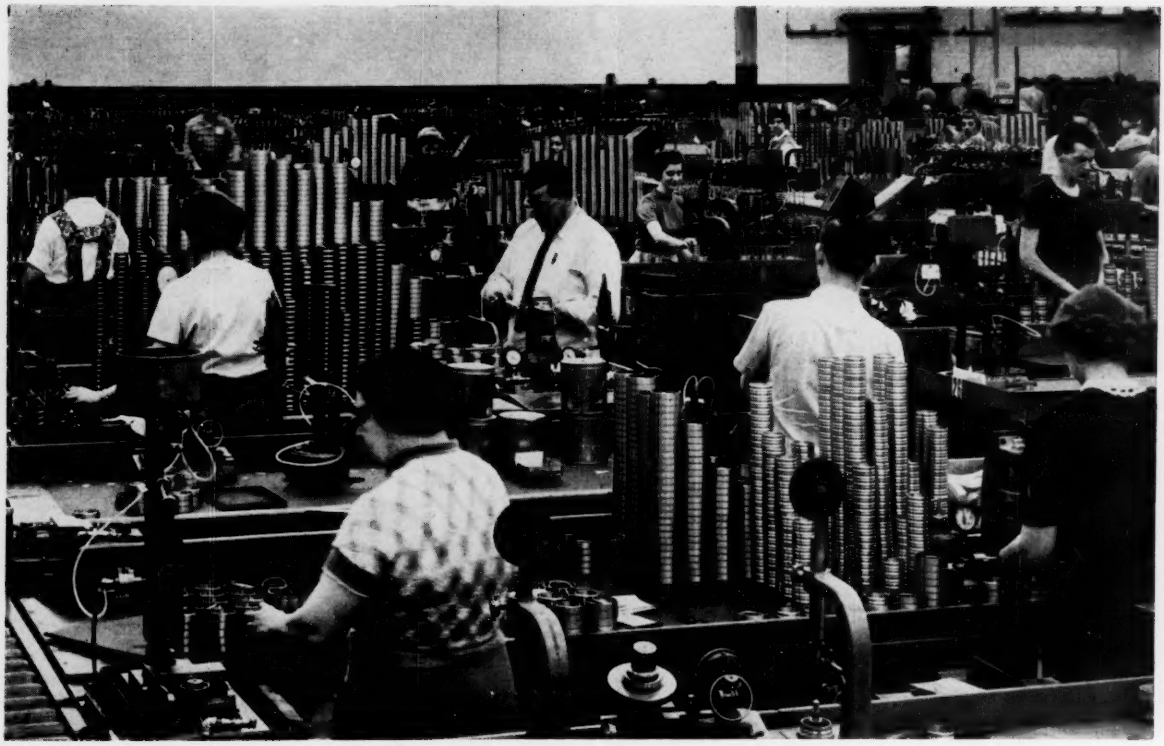
Up-to-date series of American Standards contributes in world-wide effort for standard terminology, dimensions, tolerances, and ratings to help bearing manufacturers, manufacturers of equipment using bearings, and purchasers of such equipment.

Ball and Roller Bearings

by GUNNAR PALMGREN

The ball and roller bearing industry is expanding. Evidence of this fact can be seen in the new plants opened recently by a number of bearing companies. One of these is the Newington Plant of the Fafnir Bearing Company. This plant is specializing on production of large bearings. Picture on page 197 taken at Newington shows the preliminary assembly where inner and outer rings are put together with the balls. Air temperature and humidity here are kept constant and the air filtered for maximum cleanliness. Left—Instrument bearings must be given especially careful inspection. This includes gaging bores, outside diameters, parallelism, eccentricity, and side runout. In addition, visual inspection under a magnifying glass (shown here) detects such imperfections as faulty staking or shield installation.

Fafnir Bearing Co.



MR PALMGREN, vice-president of SKF Industries, is a member of Sectional Committee B3 on Ball and Roller Bearings, which works under the sponsorship of the Anti-Friction Bearing Manufacturers Association. Mr Palmgren serves as one of the U.S. delegates at meetings of the International Organization for Standardization's technical committee on bearings, ISO/TC 4. He helped to present the U.S. viewpoint at the recent plenary meeting of ISO/TC 4 held at Turin, Italy, May 16-20, 1961. This was the eighth of a series of such meetings, the first having been held at Paris, France, in 1949. Mr Palmgren is a member of the Mechanical Standards Board of ASA.

IN THE RAPID TECHNOLOGICAL development that has taken place during this century, ball and roller bearings—or to use the collective term, rolling bearings—have played a most important part. It would be difficult to imagine what an automobile, an airplane, or a missile would be like without the use of such bearings. Similarly, in all kinds of machinery used in industry rolling bearings have proven their value and become a necessity for high efficiency and economy.

Because of the vital role and widespread use of rolling bearings, their standardization throughout industry has also been recognized as being of great importance. Work in this direction has been progressing for a long time, carried out by the American Standards Association in cooperation with the Anti-Friction Bearing Manufacturers Association (AFBMA) in this country and by the Organization for International Standardization (ISO) through its technical committee TC 4 on the international level.

This work has resulted in a number of American Standards, some of which have only recently been issued, and some of which have been reissued, having been revised to cover modifications or additions.[1] The American Standards now available provide boundary dimensions, tolerances, gaging practice, mounting specifications, bearing accessories, evaluation of load ratings, an identification code, requirements for instrument precision bearings, specifications for metal balls, and terminology and definitions.

The principle of rolling motion, and knowledge of

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[1] Boundary Dimensions for Ball and Roller Bearings, B3.6-1961. To be published later this year.
Tolerances for Ball and Roller Bearings, B3.5-1960 $1.80
Gaging Practices for Ball and Roller Bearings, B3.4-1960 (Revision of B3.4-1950) $1.00
Mounting Specifications for Ball and Roller Bearings, B3.8-1960 $2.30
Specifications for Bearing Mounting Accessories, B3.9-1960 (Revision of B3.9-1951) $1.80
Method of Evaluating Load Ratings for Ball and Roller Bearings, B3.11-1959 $1.75
Identification Code for Ball and Roller Bearings, B54.1-1960 $4.00
Specifications for Metal Balls, B3.12-1960 $1.80
Requirements for Instrument Precision Ball Bearings, B3.10-1960 (Revision of B3.10-1959) $1.00
Terminology and Definitions for Ball and Roller Bearings and Parts, B3.7-1960 $2.30

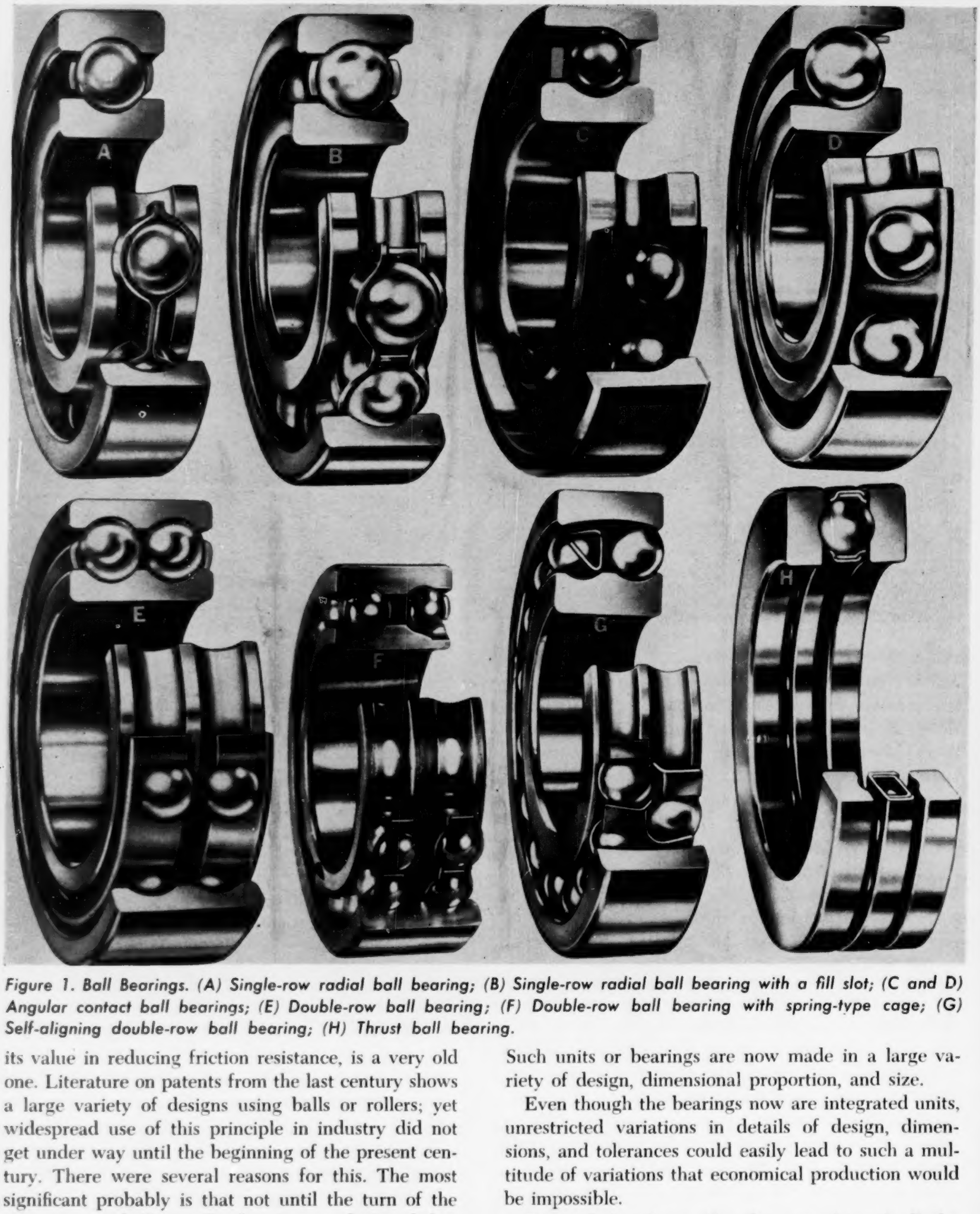


Figure 1. Ball Bearings. (A) Single-row radial ball bearing; (B) Single-row radial ball bearing with a fill slot; (C and D) Angular contact ball bearings; (E) Double-row ball bearing; (F) Double-row ball bearing with spring-type cage; (G) Self-aligning double-row ball bearing; (H) Thrust ball bearing.

its value in reducing friction resistance, is a very old one. Literature on patents from the last century shows a large variety of designs using balls or rollers; yet widespread use of this principle in industry did not get under way until the beginning of the present century. There were several reasons for this. The most significant probably is that not until the turn of the century were ball or roller bearings so designed that they became complete units, separate from other machine parts, lending themselves to mass production, standardization, and "purchase from the shelf."

Essentially, such a unit consists of an inner ring, an outer ring, and equally spaced between them a number of balls, as in Ball Bearings, Figure 1, or rollers, as in Roller Bearings, Figure 2, separated by a cage. Such units or bearings are now made in a large variety of design, dimensional proportion, and size.

Even though the bearings now are integrated units, unrestricted variations in details of design, dimensions, and tolerances could easily lead to such a multitude of variations that economical production would be impossible.

The task has been, therefore, to channel all the variables into patterns, which on one hand will make the bearings satisfactory to the user from a technical point of view, and on the other hand will lead to the best possible all-around economy. The key word here is standardization. However, in order that standardization will not be an undue hindrance to improvements in performance, or to new developments, it has

been limited by the committees working on standards to boundary dimensions, and external and internal tolerances, to the extent that they affect the bearing performance. Thus, the American Standards now available do not include internal design or material. The main purpose has been to obtain interchangeability and to help the user in some related respects.

As a matter of fact, the equipment builder, the equipment user, and the bearing manufacturer all find benefits from standardization.

By using standardized bearing dimensions and tolerances, the equipment builder has freedom to choose the bearing supplier, and the equipment user can readily obtain replacement bearings if or when needed. The bearing manufacturer, in turn, can sell a particular item to many users and thus can increase the quantity of each item and lower its price. In other words, all parties benefit.

As indicated above, ball and roller bearings are used extensively, not only in the USA, but also in all other industrialized countries, in all kinds of machinery and equipment. Much of this machinery and equipment is built in one country and shipped to a user in another. Therefore, standardization is not only needed in the USA, but also is very much needed internationally.

However, on the international scene an obstacle to standardization is the fact that most countries use the metric system of dimensions, whereas this is not the case in the USA and in a few other countries. On the other hand, in regard to bearing dimensions, this obstacle is not as great as might be expected for the reason that the majority of bearing types (ball bearings, cylindrical roller bearings, and spherical roller bearings) were first made to metric dimensions in Europe and have remained metric when also manufactured in countries using the inch system. Most bearings having standardized inch dimensions were first made in this country. These either may not have been duplicated in metric countries or if they have, it has been only to a limited extent. This refers mostly to tapered roller bearings, needle bearings, and some thrust bearings.

In order that the benefit of standardization in this field may be world-wide as much as possible, the American Standards Association has for a long time actively participated in the work of Technical Committee 4 (TC 4) of the International Organization for Standardization. ASA has been represented at all the TC 4 meetings since organization of the committee in 1949. The results have been gratifying in that important international agreements have been reached. This work is continuing and is at present centered around aircraft bearings, instrument bearings, and needle bearings.

It may be of interest to note that ISO fully recognizes that, due to established different practices in different countries, it may sometimes be necessary to forego the ideal of having only one uniform world standard and to accept two so-called parallel standards, one for metric dimensions and another similar or overlapping one for inch dimensions. This has become the case for tapered roller bearings and, to a lesser extent, for some other bearings (aircraft and instrument bearings).

In the beginning, the metric bearings were made to dimensions of bore outside diameters and width, developed in series in accordance with sound standardization principles. These early series were extended from time to time when bearings of other proportions or sizes were required. This development, as it stood in 1933, is shown in the now obsolete American Standards B3.1-1933, B3.2-1930, and B3.3-1933.

In 1939 it was recognized that the then existing standard dimensions did not cover the increasing need for bearings of lighter sections, smaller and larger diameters, or greater widths. Rather than taking one step at a time and accepting the risk that the standard might soon again become inadequate, it was then decided to develop an over-all basic plan of boundary dimensions by extending the plan in all directions to cover all conceivable requirements for a long time to come. In this manner, all concerned would have a common guide to follow when developing new bearings, and standardization would be accomplished automatically as needed. This plan would then also prevent a situation in which standardization is attempted by modification or correlation of a variety of bearings already made and used—a costly and sometimes hopeless undertaking.

The present American Standard B3.6-1961 contains two comprehensive basic plans for boundary dimensions of metric ball and roller bearings (except tapered roller bearings)—one for radial bearings and one for thrust bearings. It also contains rules for further extension of these plans if needed. The plans are built on sound standardization principles and are in agreement with the corresponding plans given in the ISO Recommendation R15-1955, with a few exceptions.

The main object of the plans is to guide future developments of metric ball and roller bearings (except tapered roller bearings). The bearing manufacturers should select from the plans those sizes and proportions which are suitable for the bearing types and purposes under consideration, while bearing users should select from the manufacturer's catalogs those types and sizes which conform to the plan. In this manner, standardization will become a reality. The plans have already demonstrated their value in this respect, for instance, in bringing order from the be-

ginning in the development of light-weight bearings for the modern jet aircraft engines.

THE PLAN FOR RADIAL BEARINGS is by far the most important. It covers bore diameters from 3 mm to 2000 mm. This range of sizes is divided in increments sufficiently small to meet users' requirements and at the same time sufficiently large to eliminate unnecessary sizes. For a given bore size there are a number of different outside diameters provided in progressive steps to permit the necessary choice of bearing design and load-carrying capacity as illustrated in Figure 3.

To accomodate the required bearing capacity and internal design for each set of bore and outside diameters, different widths are established (also in increments) as shown in Figure 4.

As mentioned before, this standardization does not cover internal bearing design, nor does it indicate bearing availability.

The plan for metric thrust bearings is developed in a similar manner, but is of less importance. It was developed at a much later date and has not had the effect in this country that was hoped for by the ISA (the predecessor of ISO), which introduced it. However, it is an example of an approach to a problem. Before the war, thrust ball bearings were made to all kinds of different dimensions in different countries. ISA soon found that the only way to obtain unification would be to disregard to a high degree bearings in use and change to dimensions which would form a uniformly progressing series. This was done. Loyal to this decision, and to obtain standardization, new bearings were offered to the trade in the metric countries and the users were put on notice that production of the older, now obsolete bearings would be continued only for a limited time. After about 20 years, the use of the old bearings was reduced to such an extent that their production could be discontinued entirely and standardization thus became complete.

In the USA the attitude was a different one. The majority of the bearing manufacturers felt that the benefit obtainable from a change would not compensate for the expense and inconvenience during a long transition period. The old bearings are therefore still in use in this country and are also included in the new American Standard B3.6-1961. Nevertheless, the basic plan of boundary dimensions for metric thrust bearings, included in the standard, serves the purpose of guiding dimensions of new bearings when required and has done so in regard to some thrust ball bearings and spherical roller thrust bearings.

The inch dimensions for tapered roller bearings, given in B3.6-1961, have developed in quite a different manner. In the interest of obtaining production economy, each manufacturer has been striving toward utilization of a limited number of cage and roller sets, but each has permitted a number of variations of bearing bore outside diameter, width and ring chamfers for each set of cage and rollers to satisfy various user requirements. The listings given in B3.6-1961 therefore represent usage rather than a scheme based on standard technical principles.

Those thrust bearings shown in B3.6-1961 which have dimensions different from the bearings in the basic plan represent established American practice and do not interchange with bearings made in accordance with ISO R15.

The same can be said about the needle roller bearings, aircraft bearings, and some other bearings also listed in B3.6-1961.

General-purpose ball and roller bearings are machine elements of high precision and the tolerable deviations from exact size or form are small. Even so, the requirements are sometimes even more exacting, calling for even higher degree of accuracy and true running. For these reasons American Standard B3.5-1960 contains tolerance values not only for general-purpose bearings, but also for bearings used in machine tools, instruments, and aircraft engines, to name some examples.

As time goes by and requirements for perfection and the ability of satisfying these requirements increase, the standard is revised. This has now taken place again, in that one more exceedingly accurate class known as ABEC 9, applicable to some ball bearings, has been added to the previously established classes known as ABEC 1, 3, 5, and 7. Some editing modifications and clarifications have also been made.

Another novelty is the addition of tolerance values for the internal radial clearance in single-row ball bearings. Bore tolerances are also included for the first time for diameter and taper of bearings having tapered bores.

In order that tolerance values of this kind may be interpreted uniformly and correctly, it is essential that the methods of their measurement be defined. This is done in American Standard B3.4-1960 in which some refinements and modifications have been made to the previous standard.

In order that a ball or roller bearing may function properly, it is necessary that it be fitted to the shaft, or in the housing, with the proper amount of interference or clearance. Direction and amount of load and rotation in relation to the direction of the load, the type of bearing and method of mounting, the material used in shaft and housing, and the condition of cooling or heating, are all factors influencing the determination of the fit to be used.

For the purpose of aiding the bearing user in establishing the proper tolerance limits of shaft and housing bearing seat diameters, and also to limit the variety and number of solid "go" and "not go" gages required for checking these diameters, recommendations are included in American Standard B3.8-1960 which, in regard to ball bearings and cylindrical and spherical roller bearings, are based on the more gen-

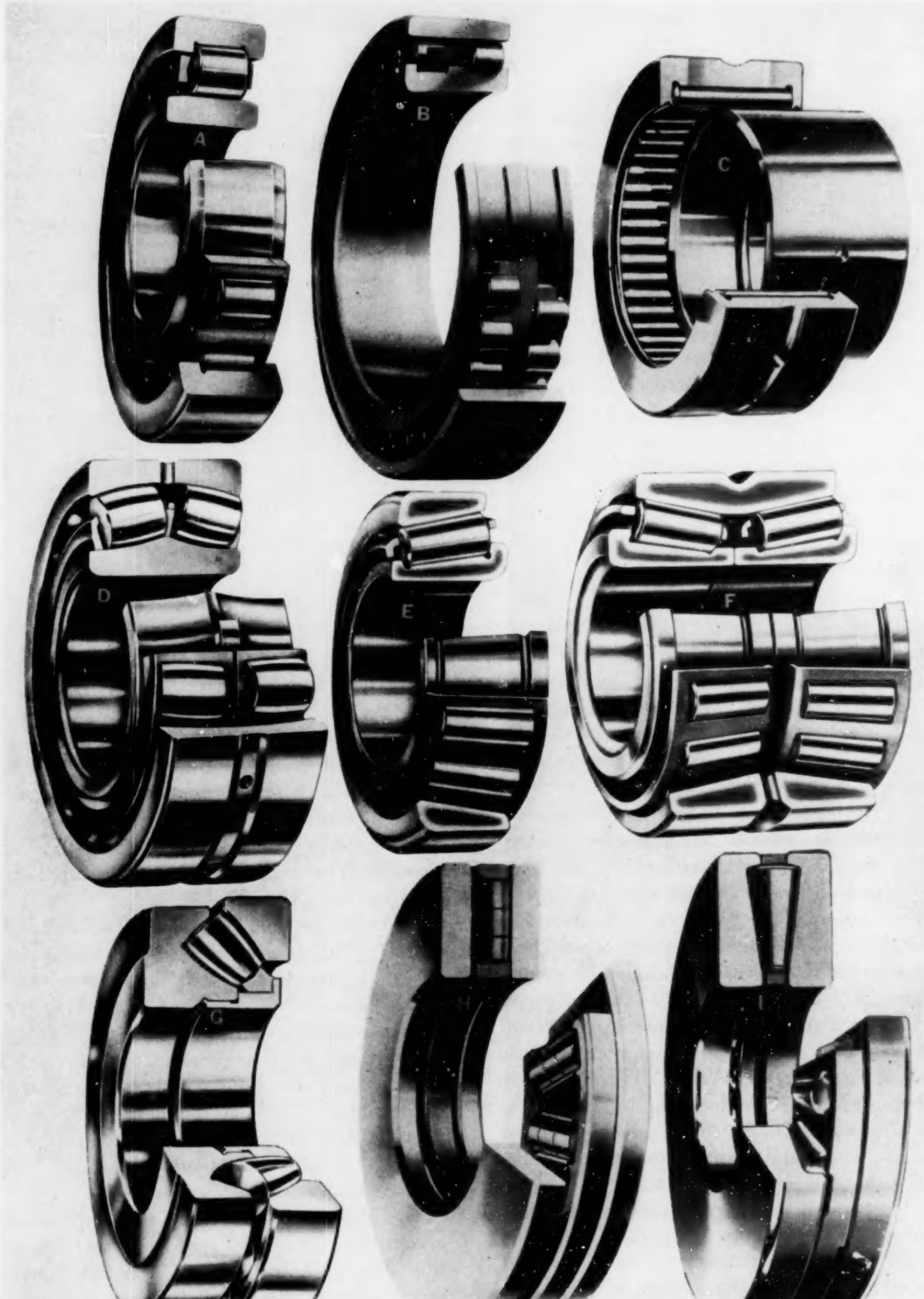


Figure 2. Roller Bearings. (A) Single-row cylindrical roller bearing; (B) Double-row cylindrical roller bearing; (C) Needle roller bearing; (D) Spherical roller bearing; (E) Tapered roller bearing; (F) Double-row tapered roller bearing; (G) Spherical roller thrust bearing; (H) Cylindrical roller thrust bearing; (I) Tapered roller thrust bearing.

eral American Standard Preferred Limits and Fits for Cylindrical Parts, B4.1-1955.

This latter standard is essentially a conversion to inch values of the corresponding ISO metric recommendations. In other words, in this area of standardization we again find an international uniformity which materially facilitates trade among the nations.

The recommendations given in B3.8-1960, for shaft

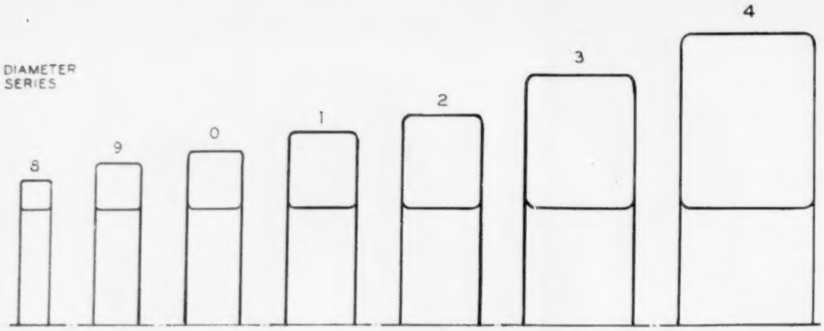


Figure 3. For a given bore size a number of different outside diameters are provided in progressive steps to permit the necessary choice of bearing design and load-carrying capacity.

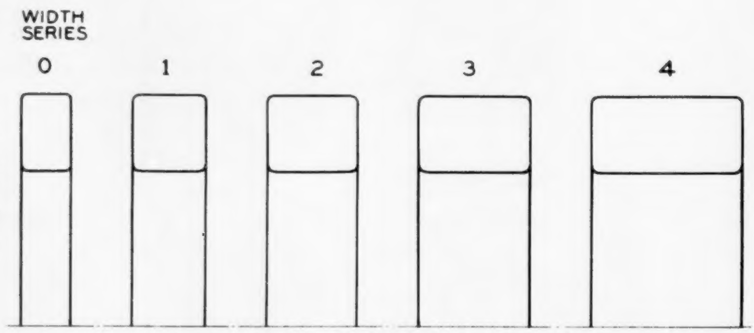


Figure 4. To accomodate the required bearing capacity and internal design for each set of bore and outside diameters, different widths are established, also in increments.

and housing fits when using inch-type tapered roller bearings, are in accord with established practice and do not agree with B4.1-1955.

Bearing Accessories

THE VERY WIDESPREAD USE of ball and roller bearings has made it desirable to standardize also on some accessories which are used for securing bearings to shafts. These accessories consist of lock nuts and washers or plates to lock the nuts to the shafts. There are also tapered adapter sleeves used to hold a bearing to a straight shaft, not provided with shoulder or thread. These parts are covered by American Standard B3.9-1960, to which a considerable number of sizes larger than those shown in the previous edition have been added. This addition does not mean that all these new sizes up to 35.5-in. shaft diameter are now in use or available. The addition is rather another example of using the principle of establishing dimensions in advance of actual requirements for the purpose of obtaining unification by gradually growing into it.

American Standard B3.11-1959, Method of Evaluating Load Ratings for Ball and Roller Bearings, is different from all the others in that it does not deal with physical dimensions or tolerances, but rather with evaluation of an important aspect of the bearing performance. Naturally, such a standard cannot affect the performance as such, but it gives the bearing designer and bearing user a uniform method for evaluation of the load-carrying capacity and expected fatigue life and thus a tool or "yardstick" whereby to measure and compare the merits of one design against another, or one size against another, or one make of bearing against another. This standard was described in some detail in a previous article in the May, 1959 issue of this magazine [2] and further comments, therefore, are not repeated here. However, since that time, a slight addition and clarification has been made in regard to the static capacity of ball bearings.

An American Standard of great importance is B54.1-1960, Identification Code for Ball and Roller Bearings. This standard, which does not cover tapered roller bearings, was described in the May, 1960 issue of this magazine [3]. The purpose of the code is to identify and, as far as possible, describe each bearing on the basis of dimensional and functional interchangeability. The code numbers are not intended to be used as part numbers, drawing numbers, or accounting numbers, although in isolated cases they may be usable for such purposes.

The code, which in regard to metric bearings was accepted by ISO/TC 4 (see Draft ISO Recommendation No. 157), provides a universal language for describing and identifying bearings in order to facilitate communications between the user and the manufacturer, not only in the USA but also in other countries. The code is also meant to simplify identification by the user's personnel of bearings made by

[2] Ball and Roller Bearings—How to Check Their Load-Carrying Capacity, by Gunnar Palmgren. THE MAGAZINE OF STANDARDS, May 1959, page 133.
[3] Identification Code for Ball and Roller Bearings, by Jerrus M. Bryant. THE MAGAZINE OF STANDARDS, May 1960, page 136.

different manufacturers whose various identification numbers may be difficult to interpret.

The code has been developed to cover only those ball and roller bearings (except tapered roller bearings) whose boundary dimensions and tolerances are in agreement with the American Standards.

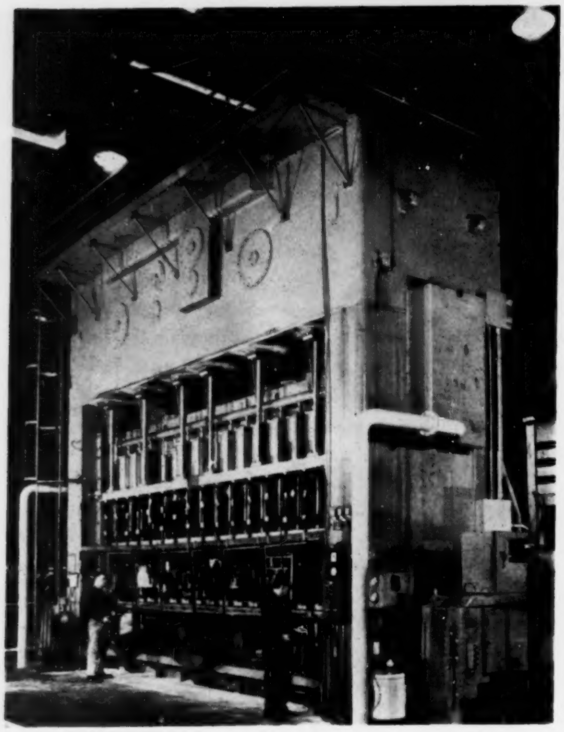
Since bearings are not standardized in details of internal design, a standardized bearing number must be applied with caution. Differences in internal construction may affect the bearing function. Therefore, two bearings made by different manufacturers may not be functionally interchangeable even though they are described by the same code number and are dimensionally interchangeable.

As a complement to the standards for ball and roller bearings, a standard for separate balls has also been developed, in American Standard B3.12-1960. It may seem that a ball, being one spherical piece, would not involve much to require standardization except size. Nevertheless, this standard covers a number of aspects, such as definitions of "Roughness," "Waviness," "Basic Diameter," "Basic Diameter Tolerance," "Case Depth," "Crushing Strength," "Diameter Tolerance per Ball" and "Diameter Tolerance per Unit Container," "Grade," "Hardness," and many other such fine points. This standard also covers material requirements and tolerance values of different kinds for a number of different grades and purposes. These tolerances involve dimensions, out-of-roundness, surface characteristics, hardness, crushing strength, and acceptance provisions, all applying to balls made of a number of different materials. Methods of measuring are also covered.

American Standard B3.10-1960, Requirements for Instrument Precision Ball Bearings, is a first attempt at standardization in this special field. It defines in broad terms what is meant by an instrument precision ball bearing and gives boundary dimensions and dimensional tolerances for such bearings, most of them in inches, some in millimeters. Work is now being done toward developing methods of measuring and limits for torque, vibration, internal contact angle, and cleanliness. In this respect ASA is in close cooperation with ISO through committees ASA B3 and ISO/TC 4. The subjects are difficult ones and may require considerable research and time for development.

The last of the package of American Standards dealt with here is the Terminology and Definitions for Ball and Roller Bearings and Parts, B3.7-1960. This standard in its present form is essentially a dictionary explaining a number of terms used in the bearing industry. The explanations are given partly in words and partly by illustrations. No attempt is made at giving preference to a particular term where several different ones are used for the same purpose. This standard has been subjected to some criticism and is therefore under revision. This subject is also under joint study by ASA and ISO.

It should be emphasized that all the good work done by the various technical committees in developing standards based on sound principles or that reflect the best unification which can be obtained, will bear considerable economical fruit for all concerned, if the standards are carefully followed by manufacturers and users. In this spirit it is urged that bearings and practices which conform to the standards always be given preference over those which do not.



For Safe Use of Power Presses

by H. B. Duffus

MR DUFFUS presented this paper on the 1960 edition of the American Standard Safety Code for Power Presses at the National Safety Congress held in October 1960, a month before his sudden death. Mr Duffus was the general chairman of Sectional Committee B11 and had done more than almost any other person to keep the standard alive and up to date. Very few individuals associated with the American Standards Association or the National Safety Council have worked as long and faithfully for the prevention of accidents and for the development of safety standards for the protection of industrial employees. When Mr Duffus presented his paper on the new edition of American Standard B11.1-1960, this edition had already been approved. However, its publication had been postponed awaiting completion of an appendix (see footnote 2). Mr Duffus was administrator, Accident Prevention, Westinghouse Electric Corporation, Pittsburgh, Pa., and chairman of Sectional Committee Z16 as well as Sectional Committee B11. He also was a member of the Safety Standards Board of ASA. As a member of the National Safety Council, he had served on the Council's Board of Directors and Industrial Conference Executive Committee, and was past chairman of the Council's Automotive and Machine Shop Section and the Electrical Equipment Section.

With more than a quarter of a million mechanical presses now in operation throughout the country, serious thought has to be given to improve safety in these operations. The need for this is emphasized by the high potential hazard to the press operator and die setter as they feed and remove material from under the punch, or during die setting operations. Past experience has shown that press operations contribute to a high percentage of finger, hand, and even arm amputations within industry.

The press builder has done much during the past decade to make the power press a safer and more reliable tool. Better frame design, improved clutch mechanism, and the development of better press control systems have made it possible to apply tools and dies that permit automatic, semi-automatic, or remote feeding. Improved press design also facilitates the application of safety devices that ensure operator safety on those operations that have to be fed under the punch by hand tool.

While this improved technology is now available on new presses, it will be many years before their total effect will be apparent in press operations. The average age of presses now in use throughout industry is 20 years. By converting clutches, air valves, limit switches, and control systems, many of the average-age presses now in use can be brought up to date. The importance of this is enhanced by the fact that a very high percentage of the presses now in use will still be operating for the next 20 years, and, when modernized, the life of the press may be doubled.

The American Standard Safety Code for Power Presses, now B11.1-1960, is one of the oldest American Safety Standards. The project[1] was initiated back in 1920, and the first edition sponsored by the National Safety Council is dated 1922. Since that time there have been five revisions–1924, 1926, 1937, 1945, and the present standard dated 1960.[2] The work of Sectional Committee B11 has been complicated by the wide variations in operations and operating conditions. Metal stamping, forming, and bending requires a broad range of presses with great complexity of work tools and press applications.

Improvement in press design, performance, and a wide range of safety devices kept influencing the committee on revision toward setting safety standards that would assure press operator safety under most operating conditions. For example, the statement,

[1] Identified as B11, this project was initiated by the American Engineering Standards Committee, now the American Standards Association, in 1920, with the National Safety Council as sponsor.

[2] American Standard B11.1-1960 was approved early last year but at the request of the sectional committee its publication was postponed awaiting completion of an appendix which the committee believed should be published with the standard in the same volume. The appendix provides additional information to help in protecting power press operators and in interpreting the standard. American Standard B11.1-1960, including the appendix, is now available at $4.00.

"press operator shall not be permitted to place his hands within the point of operation to feed or remove material," would completely eliminate amputations, and with modern press setups this is very practical. However, the trade has so many older presses in use and on such a wide diversity of operations that such an operating standard is not acceptable at this time. Similarly, improved design and availability of safety devices influenced the committee towards standards of compliance that would ensure employee safety, providing the equipment was applied, used, and maintained as intended. Experience dictated that this was not practical, so many of the excellent features available to the trade could not be fully applied in this revision. The committee had to be satisfied with providing a standard that applies all of the advantages of modern technology, consistent with its practical application to press operations.

To take full advantage of improved safety in press design and construction, and of the improved methods of press feeding and material handling, this latest revision points out that maximum safety can be obtained by providing the means that will make it unnecessary for the operator to place his hands or any part of his body within the point of operation to feed or remove material. These objectives can be obtained by the following:

1. Where practical, limit any opening at the point of operation to ¼ inch.

2. Use automatic or semi-automatic loading and unloading of the dies or make proper use of point of operation enclosure guards.

3. Use auxiliary protective devices to control access to the point of operation. In addition to these safety devices, hand tools or other feeding and stock removal methods should be used—methods that would make it unnecessary for the operator to place his hands within the point of operation.

The three most significant changes in the new 1960 standard are:

1. The revised standard covers only power presses. Because of the difference in press design and construction of foot and hand presses, it was agreed that foot and hand presses would be best covered by a separate code. The request for this separate code has been made and work will be started to organize a committee immediately after American Standard B11.1-1960 is published.

2. There is now a clean-cut definition between a guard and a safety device.

A guard is defined as a physical barrier between the operator and the point of operation—either a permanent part of the press or die, or interlocked into the press control circuit so that the guard must be in place to make the press operative.

A device is a machine control or an attachment which allows the operator access to the point of operation for loading or unloading the die. It either prevents the normal operation of the press until the hands are out of the danger zone, or it automatically removes the hands as the press slide descends.

3. A more complete definition of hand tools and hand tool feeding is provided. While hand tools are not recognized in the standard as safety devices, it is emphasized that hand feeding under the punch is dangerous and that on secondary operations where hand feeding is required, hand tools should always be used, since adherence to this principle will keep the hands out from under the punch—if the hands are not permitted under the punch, fingers cannot be amputated.

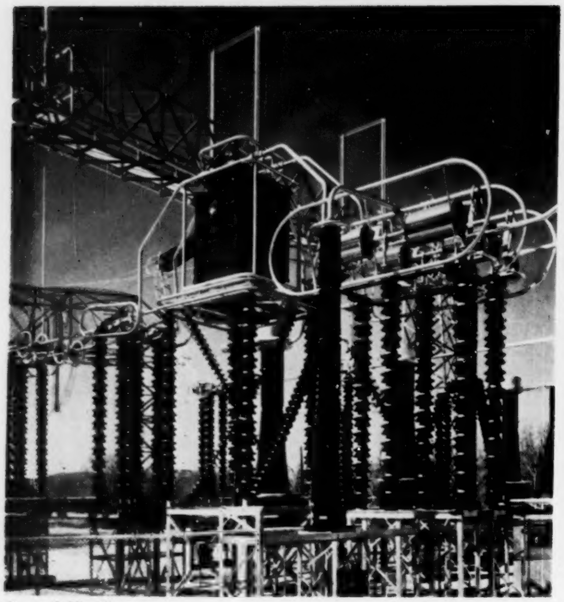
Also significant is the fact that additions have been made to the appendix that will do much to make the standard a more useful tool for the prevention of press accidents.

It is recognized that these standards are the minimum requirements for safe operation of power presses. As with all other American Safety Standards, this standard has been developed under the consensus principle, so that each party having a reasonable interest in the standard had a voice in its acceptance.

The appendix is not a part of the standard; it is used to describe and illustrate other suggested means of protection for press operators and to define or describe any parts of the standard that could be misinterpreted. In Section 4A of the appendix, titled "Press Construction and Installation," the committee has tried to point out that while much can be done for operator protection by the use of safety devices, the press builders have available auxiliary equipment that reduces appreciably the probability of press failures. In fact, through the addition of a second air valve or ram control limit switch, a detection system that will respond to a valve failure, and a fail-safe control system, the probability of a press malfunctioning can be in the order of 50 million to one. By taking full advantage of the technological advancements made in press design, the safety of press operators and the over-all efficiency of press operations can be enhanced substantially. In the majority of cases, the increased press efficiency more than compensates for the cost of modernization.

By expanding the appendix to include full information on press design construction and maintenance, and by illustrating effective methods of guarding, we have attempted to show that much can be done to reduce the probability of press failure. This, in addition to effective guarding, can make most press operations inherently safe. Where this is not practical, the use of protective devices will protect the operator against unsafe presses.

The committee has worked very hard in the development of this revised standard, always working for the most effective means of providing safe press operation consistent with press operating efficiency. You will find it a useful tool in making your press operations safe.



General Electric

Insulator Test Up to Date

by R. M. Havourd

WITHOUT INSULATION, be it solid, liquid, or gaseous, it would be impossible to generate, transmit, or use electricity. Without standards, the cost of generating, transmitting, and using electricity would be substantially higher than it is.

When one thinks of insulation, one immediately thinks of porcelain. Porcelain is a material which has been used for many years as a staple for electrical insulation. It has been improved greatly over the years from its early beginning when dry-process porcelain was used to the present use of highly refined and materially stronger wet-process porcelain.

In addition to the major improvements made in the basic material itself, great strides have also been made in glazes and in methods of attaching metal parts to a porcelain body. Significant increases in strength have been attained through the use of compression glazes, improved cementing processes, and improved design shapes.

R. M. HAVOURD, chairman, ASA Sectional Committee C29, Insulators for Electric Power Lines, is with the Public Service Electric and Gas Company, Newark, New Jersey.

To keep pace with today's rapidly changing and advancing technology, new standards are continually being written and old standards reviewed and revised. Such work requires the expenditure of a great deal of time and effort by a great many people, all well versed in their various fields of endeavor. As in the case of all American Standards, this is true of the new porcelain insulator test method and specifications.

American Standard Insulator Tests, C29.1-1944, which covers line type and apparatus insulators is, as the name implies, a test method. It has been with us for quite a number of years and has, during that time, been used extensively by the electrical industry as the method for checking the characteristics of old and new insulators. However, the insulator industry like all others is not static and more and better methods of testing insulators are continually being developed. It is for this reason that C29.1-1944 has been revised and is now available as C29.1-1961.

Some of the revisions are rather minor, while others consist of completely new tests. Some important changes are:

1. New and revised definitions of terms.
2. Low-frequency dew-withstand voltage test added.
3. Thermal test revised to remove all temperature limits so that the document is just what it is supposed to be, a test method. The temperature limits have now been included in the product specifications where they should be.
4. Drawings showing the gages used for pinhole gaging tests have been removed and included in the product specifications.
5. Drawing showing impact testing machine has been removed and included in the product specification.
6. Test for thickness of coating of zinc has been added to the galvanizing test.

Specifications C29.3-1961 through C29.9-1961, which are the product specifications, cover wet-process porcelain insulators of the following types:

C29.3-1961	Spool
C29.4-1961	Strain
C29.5-1961	Low- and medium-voltage pin
C29.6-1961	High-voltage pin
C29.7-1961	High-voltage line post
C29.8-1961	Apparatus—cap and pin
C29.9-1961	Apparatus—post

These new specifications, which are now available, have undergone minor revisions; mostly to bring the test method references in line with the new C29.1-1961. Questions raised on the proposed revision of C29.2-1955, which covers suspension type insulators, are still under study and the revised edition of this standard is not yet available.

Anyone involved with insulators and not familiar with these publications is urged to obtain a copy of each. Their use should prove to everyone's advantage.

Dr Alberto S. Neves

New Program for Pan American Standards

Dr Paulo Sa

by J. R. Townsend
President, American Standards Association; leader, ASA delegation to meeting of the Pan American Standards Committee, April 24-27, 1961.

IN A MOVE TO INCREASE the effectiveness of standardization as an aid in the economic development of all American countries, agreement was reached at a meeting in Uruguay, April 24-27, for active cooperation in the work of a reorganized Pan American Standards Committee. Thirty-three delegates representing eight countries attended the meeting: Argentina, Brazil, Chile, Colombia, Peru, the United States,[1] Uruguay, and Venezuela. The Organization of American States, the International Organization for Standardization, and the Union Panamericana de Associaciones de Ingenieros (UPADI) were also represented.

Dr Alberto Sinay Neves of General Electric, S.A., was elected president of the reorganized Pan American Standards Committee. A past president of the Brazilian National Committee of the International Electrotechnical Commission, Dr Neves has had many years experience in standardization. In recognition of the long participation in Pan American standardization activities of Dr Paulo Sà, director of the Brazilian Standards Association (ABNT), and his long service as president of PASC, Dr Sà was made permanent honorary president. John R. Townsend, president of the American Standards Association, was elected vice-president; and Senora Ing. Beatriz Ghirelli de Ciaburri was named provisional executive secretary. Senora de Ciaburri is executive director of the Argentine National Standards Organization (IRAM).[2]

She will serve the PASC without pay until it becomes possible to employ a permanent executive secretary, and will make the facilities of IRAM available for the work of the Pan American Standards Committee. Ing. Juan P. Molfino, president of the Uruguayan standards association, will serve as treasurer.

The standards organizations of the United States, Argentina, Chile, and Uruguay were elected to membership on the Council of PASC for staggered terms. The United States will serve until December 31, 1962; Argentina and Uruguay until December 31, 1963; and Chile until December 31, 1964.

Hitherto, the Pan American Standards Committee has limited its membership to national standardizing bodies. Now, however, technical organizations from those countries having no national standardizing bodies may become associate members.

To support the organization, it was agreed to levy proportional dues based on the economic resources of the respective countries. In the meantime, however, an item is being included in the budget of the Organization of American States for the next two years to aid in getting the work on Pan American standards started.

[1] The American Standards Association is the U.S. member of the Pan American Standards Committee. Its delegation at the PASC meeting in Uruguay consisted of: John R. Townsend, Consultant to the Director, National Bureau of Standards, and president, American Standards Association, delegation leader; Vice Admiral G. F. Hussey, Jr, USN (Ret), managing director of ASA (also representing the ISO); Dr A. T. McPherson, associate director, National Bureau of Standards; Thomas A. Marshall, Jr, executive secretary, American Society for Testing Materials; Horace A. Hunnicutt, technical representative for Brazil of the International Nickel Company, representing ASTM; Richard L. Kessler, chief engineer, Chrysler Argentina, S.A.; and B. J. Smith, chief engineer, Ford Motor Argentina, S.A., representing the Society of Automotive Engineers.

[2] See THE MAGAZINE OF STANDARDS, March 1961, page 69, for Senora de Ciaburri's description of the work of the Argentine standards association.

Senora Beatriz Ghirelli de Ciaburri

Ing. Juan P. Molfino

PASC plans to develop and promote the use of uniform technical standards in the following fields:

1. Iron and steel products
2. Construction materials, cement, wood, glass, compressed building board, and asbestos fibers
3. Materials for electrical equipment
4. Textile fibers, classification and tests
5. Transportation materials, railway and automobiles
6. Sugar and alcohol
7. Vegetable and animal fats and oils
8. Leather and tanning materials
9. Canned foods
10. Solid and liquid fuels

Work on technical standards is to be started immediately by committees of scientists and technologists from the various countries. Members of the committees will be chosen because they are expert in the products for which standards are to be developed. It is planned that many of the standards of other countries will be converted to Pan American standards by modifying them to meet Latin American needs. Among the standards already widely used in Latin America are a number of American Standards, standards of the American Society for Testing Materials, the Society of Automotive Engineers, other North American standardizing organizations, and those approved by the International Organization for Standardization as ISO Recommendations.

DURING THE TRIP to Montevideo, Mr Townsend and Admiral Hussey took the opportunity to visit several of the national standards associations in Latin America.

In Mexico they had a short visit with Senor Lic. Feliciano Garcia Ramos, director general of the Mexican standards body, Direccion General de Normas, and several of his staff. The DGN is being reorganized and therefore was not represented at the meeting of PASC. The reorganized body will have responsibilities similar to both the National Bureau of Standards and the American Standards Association in this country. An active standards program is being developed. As pointed out by Senor Garcia Ramos, Mexico's industrial development is comparatively new and Mexican industries are not saddled with old equipment or old customs. Consequently, they can adopt modern methods without the heavy expense involved in writing off old equipment.

In Santiago, Chile, Dr Carlos Hoerning, director of the Instituto Nacional de Investigaciones Technologicas y Normalizacion (INDITECNOR), and several members of his staff met with the U.S. delegates. The budget of INDITECNOR is $80,000, in part contributed by the government. American Standards and standards from other United States sources are used frequently, although often the sections that have particular application to Chilean problems are extracted rather than adopting the standard as a whole. It is important to establish a program to provide translations of standards from U.S. sources, Dr Hoerning urged, commenting that the Germans have translated a large number of German standards into Spanish and have published a catalog of such translations.

Mr Townsend and Admiral Hussey also called on the president of INDITECNOR, who is the Rector of the University, and visited the testing laboratory operated by the University. The buildings and equipment of the Laboratory are owned by the University faculty, and the $1,000,000 budget is supplied partly by the government (60 percent) and partly by industry. The U.S. delegates were greatly interested in the following activities:

1. The wood laboratory where U.S. Forest Products Laboratory Standards are used.
2. The laboratory for testing construction materials.
3. Electrical testing laboratories, which have 1,000,000-volt high-tension equipment for testing insulators and transformers. Chile generates 900,000 kva, 80 percent of which is by hydraulic equipment. At present a 150,000-volt line is in operation and Chile expects to build a 220,000-volt line in the future. Insulators are supplied from England and Switzerland.
4. Computer laboratory containing an analog computer. The laboratory expects to obtain a digital computer in the near future.
5. Metallurgical laboratory, where the equipment is used mostly for checking metal failures.
6. Sand test laboratory.
7. Concrete laboratory. In Chile, concrete blocks are made with sand and are very heavy, since

no cinder is available in Chile for making blocks. However, it was indicated that it would be possible to make tuffa blocks.

Chile has some coal in the southern area, and enough petroleum to supply local needs for gasoline for some 17 years. The hydroelectric development of the country is in the north.

Although American engineering textbooks were in evidence everywhere, much of the equipment in use, manufactured in recent years, came from other parts of the world—Switzerland, Germany, United Kingdom, USSR. Apparently the U.S. provides the engineering "know-how" but the nations of Europe supply the equipment.

The Chilean people are industrious; the streets are crowded; prices are high. The University is devoted to training engineers, and engineers are badly needed. Engineering salaries are good.

Chile has large pine forests, a fact which we believe should be better known. The delegation particularly noted that the newsprint produced and used in Chile is very good. And we were informed as a point of special interest that wood chip panels with polyvinyl adhesives are being introduced. It was pointed out that there are no antitrust laws in Chile; hence, price fixing by large companies is not prohibited by law.

In Argentina, the U.S. delegates went over the plans for the PASC and its new constitution with Senora de Ciaburri, director general of the Instituto Argentino de Racionalizacion de Materiales (IRAM), and with IRAM's Board of Directors. In this meeting a full understanding was reached of the different viewpoints of IRAM and ASA on PASC reorganization, although no solution for the differences was achieved.

Subsequently there was a meeting with the Minister of Industry which was attended by a number of other ministers and assistant ministers of the Departments of Commerce, Agriculture, Fuel and Energy, Finance, and Public Works. The Minister of Industry set forth clearly the support of his ministry and by inference of the Argentine government for standardization through IRAM and through the PASC. There was an impressive turnout of industry representatives, in addition to those from the Argentine government. Both Mr Townsend and Admiral Hussey had an opportunity to speak to the group and to set forth the desire of the United States to be helpful but not to dominate the PASC. They took note in particular of the solid governmental and industrial support which was in evidence in Argentina.

Upon arrival in Montevideo there was an opportunity to meet with Ing. Juan P. Molfino, Director of UNIT, the Uruguayan national standards body. It developed in the meeting that the Uruguayans had redrafted the statutes as proposed by the Brazilians and in so doing had incorporated a number of the changes proposed by the ASA.

The meeting of the Pan American Standards Committee was held at the headquarters of UNIT, with the sessions under the chairmanship of Senor Molfino, as director of the host organization, and Dr Sà as president of the PASC.

There was ready agreement to Mr Townsend's proposal that the order of the agenda be modified so that the program of work would be developed first followed by determination of the financial needs and the means therefor, with the revision of the statutes and the election of officers following afterwards.

The development of the program of work was confided to a subcommittee consisting of the delegation leaders. They presented a program giving first attention to fundamental standards, conversions and preferred numbers and then to standards for five groups of materials of major importance through Latin America (see first five items listed on page 208.)

There was also listed a secondary group of five types of materials having regional rather than continental interest (see last five items listed on page 208).

The report on the program of work was accepted unanimously by the Committee sitting as the General Assembly.

The USA delegation at the Pan American Standards Committee meeting—(Seated, left to right): Thomas A. Marshall, Jr; John R. Townsend; G. F. Hussey, Jr. (Standing): Dr A. T. McPherson; Richard L. Kessler; Horace A. Hunnicutt; B. J. Smith.

In discussions on the statutes the draft proposed by the Brazilian committee, as rearranged by the Uruguayans, was taken as the starting point. Because of broad instructions given to the Drafting Committee to include the specific duties and powers of the several organizations, such as the General Assembly and the Council, there crept into the final document grant of specific powers and responsibilities to the Executive Board consisting of the four officers. With a wide geographical scattering of the officers it appeared to the ASA delegation that an unworkable situation would be created. It was not possible to secure agreement in the closing hours of the meetings to eliminate this Executive Board. (The ASA Board of Directors in its action approving the agreement by the ASA delegation to the revised statutes has specified 18 amendments which were essential in order to provide a workable organization, clarity of certain articles of the statutes, and idiomatic English in other places.)

The terms of membership in the Council and the terms of the officers start January 1, 1962, but those elected agreed to commence serving immediately in order that the work might get under way.

The U.S. delegation found it of particular value to have the representatives who were drawn from American firms in Latin America because of their knowledge of the industrial situation, their familiarity with the languages, and their own technical competence. The delegation met on Sunday, April 23, to develop plans for the presentation of the United States viewpoint. Throughout the week the delegation met at least once a day to review progress and to make plans for the next steps on the agenda. This system proved to be very successful and avoided the necessity for intra-delegation conferences during the course of the meetings.

Members of the United States delegation emphasize that the success of this work will depend on active participation by the industries that will benefit from the standardization activities. It is especially recommended that American firms doing business in Latin America give generous support to the work of PASC both technically and financially through their branches and representatives in the different Latin American countries. It is also urged that they participate in the work of the national standards organizations in the countries where they are located.

CROSS-INDEXING

Industry and Military Specifications and Standards

Reported by W. L. HEALY

Do you know of any case where an adequate, and comparable, industry standard or specification can be used for a military document? If so, you are invited to call it to the attention of W. L. Healy, staff engineer, American Standards Association. Mr Healy is cross-indexing and analyzing comparable industry and military specifications for the Bureau of Ships under a contract with ASA.

It is the thought that the materials represented by the industry standard are the standard, and more readily procured, materials and that items made to any requirements beyond those listed in the standard documents are usually the items for which premium prices are paid. It is hoped that these industry standards and specifications which have been listed along with their comparable military documents and published in THE MAGAZINE OF STANDARDS might be used for procurement. However, the use for procurement of any of the published industry standards or specifications, especially in the area of critical application, is a matter for decision by the cognizant engineering office.

Following are recent examples of work performed under the contract. For other examples, see THE MAGAZINE OF STANDARDS, February, 1961, page 57; March, page 78; April, page 116; May, page 146; and June, page 176.

(1) WW-T-799A, TUBING, COPPER SEAMLESS (FOR USE WITH SOLDERED OR FLARED-FITTINGS), 6/27/1946

ASTM B 88-58, Seamless Copper Water Tube, suitable for plumbing purposes, underground water services, drainage, etc, is equivalent to Federal Specification WW-T-799A, types K, L, M, and could be used for procurement. The chemical and mechanical properties requirements are the same. This tube is also suitable for copper coil water heaters, fuel oil lines, gas lines, etc.

ASTM B 280-58T covers soft annealed seamless copper tube in coils for refrigeration service, types DHP, DLP, or OF. The Federal Specification WW-T-799A covers copper types OF and DLP for electric conductors.

ASTM B 188-59 covers seamless copper BUS pipe and tube, hard and soft annealed, or hard drawn, for electric conductors.

Any specific requirements in regard to packaging, sampling, or inspection should be specified in the ordering data.

(2) MIL-S-866C, STEEL: BARS AND BILLETS (FOR CARBURIZING), 3/29/1954

AISI steels 1016, 3115, 4615, and 8615 are equivalent to military specification MIL-S-866C steels, classes 1016, 3115, 4615, and 8615, respectively, and could be used for procurement. There are some slight differences in chemical properties requirements. Military specification class 1016 allows C 0.11-0.20%, Mn 0.57-0.93%, P 0.048% max, S 0.058% max, and Cu 0.40% max, while AISI 1016 class permits C 0.13-0.18%, Mn 0.60-0.90%, P 0.04% max, S 0.05% max. Military specification class 3115 allows 0.11-0.20% C, 0.37-0.63% Mn, 0.045% P max, 0.045% S max, 0.18-0.37% Si, 1.05-1.45% Ni, 0.52-0.78% Cr, 0.40% max Cu, while AISI 3115 class allows 0.13-0.18% C, 0.40-0.60% Mn, 0.04% P max, 0.04% S max, 0.20-0.35% Si, 1.10-1.40% Ni, and 0.55-0.75% Cr.

Military specification class 4615 allows 0.11-0.20% C, 0.42-0.68% Mn, P and S each 0.045% max, 0.18-0.37% Si, 1.60-2.05% Ni, 0.18-0.32% Mo, and 0.40% Cu max, while AISI specification class 4615 has 0.13-0.18% C, 0.45-0.65% Mn, P and S each 0.04% max, 0.20-0.35% Si, 1.65-2.0% Ni, 0.20-0.30% Mo.

Military specification class 8615 permits 0.11-0.20% C, 0.67-0.93% Mn, P and S each 0.045%, 0.18-0.37% Si, 0.37-0.73% Ni, 0.37-0.63% Cr, 0.13-0.27% Mo, 0.40% Cu max, while AISI specification class 8615 allows 0.13-0.18% C, 0.70-0.90% Mn, P and S each 0.04% max, 0.20-0.35% Si, 0.40-0.60% Cr, 0.15-0.25% Mo, and 0.40-0.70% Ni.

In addition to the above, the military specification places a limitation on grain size, and requires a macroscopic examination; the military specification also requires continuous identification markings of bars. Any other specific requirements in regard to packaging, sampling, or inspection should be specified in the ordering data.

(3) QQ-S-691A, STEEL: PLATE, CARBON, MARINE BOILER, 8/4/1955

ASTM A 201-57T grade A and grade B are equivalent to QQ-S-691A classes A and B and could be used for procurement. ASTM A 212 (57T) grade B is equivalent to Federal Specification QQ-S-691a, Class C, and could be used for procurement.

In each case the chemical and physical properties requirements are the same for fire-box quality. The Federal Specification covers only fire-box quality while ASTM A 201 and ASTM A 212 list fire-box and flange qualities.

The Federal Specification provides that all plates ⅝" thick and over should be sand blasted. The Federal Specification prohibits the use of repair welding of surfaces and edges, and is more restrictive in gauge tolerance and weight than the ASTM specification.

Any other specific requirements in regard to packaging, sampling, and inspection should be specified in the ordering data.

(4) MIL-S-862B, STEEL BARS, CORROSION RESISTING, AND STEEL BILLETS, CORROSION RESISTING; REFORGING APPLICATION, 4/6/1951

ASTM A 314-58, steel types 302, 303, 303SE, 304, 304L, 309, 310, 316, 316L, 317, 321, 347, 403, 405, 410, 414, 416, 416SE, 420, 430, 430F, 430F Se, 431, 440A, 440B, 440C, and 446 are equivalent to military specification MIL-S-862B, steel class numbers corresponding to the above.

The chemical properties requirements are the same and ASTM A 311-57T specification could be used for procurement. Steels, classes 322, 324, 440F, and 440F Se, listed in the military specification, are special steels and not listed in the ASTM specification. If required, they may be had by specifying in the order-

ing data. In addition, the military specification requires a macroscopic etch test. The military specification permits repair of defects but limits the depth of chipping or grinding.

Any specific requirements in regard to packaging, sampling, or inspection should be specified in the ordering data.

(5) MIL-T-20168A-TUBES, RED BRASS, SEAMLESS 6,000 PSI MAXIMUM PRESSURE, 11/1/32

ASTM B-135-60, alloy #1, is equivalent to military specification MIL-T-20168A, light annealed (bright or light annealed and acid cleaned after final annealing).

The chemical properties requirements are the same. The military specification requires, when specified in the order, a tensile strength of 40,000 psi, and minimum yield of 12,000 psi at 0.5% offset. The ASTM specification requires a minimum tensile strength of 44,000 psi and Rockwell Hardness Scale 30T, 43-75.

Any specific requirements in regard to packaging, sampling, or inspection should be specified in the ordering data.

(6) MIL-P-3115B, PLASTIC-MATERIAL, LAMINATED, THERMOSETTING, SHEETS, PAPERBASE, PHENOLIC-RESIN, 7/28/1950

ASTM D 709-55T, Type 1, Cellulose Paper-Base, grades XX, XXX, and XXXP are equivalent to military specification MIL-P-3115B. types PBG, PBE, PBE-P, respectively. The properties listed in the two specifications are equivalent.

This military specification is also comparable to NEMA standard Pub. No. LP-1-1959 except that the NEMA standard includes values for intermediate thicknesses not covered in the military specification.

Any specific requirement in regard to packaging, inspection, or sampling should be specified in the ordering data.

(7) MIL-P-15035B, PLASTIC-MATERIAL, LAMINATED, THERMOSETTING: SHEETS, COTTON-FABRIC-BASE, PHENOLIC-RESIN, 6/2/1950

ASTM D 709-55T, Type II, Cellulose Fabric-Base grades C, CE, LE, and L are equivalent to MIL-P-15035B, Types FBM, FBG, FBE, and FBI, respectively. This specification covers sheets only. The properties in the two specifications are equivalent.

This military specification is also comparable to NEMA standard Pub. LP-1-1959, except that the NEMA standard includes values for intermediate thicknesses not covered in the military specification.

Any specific requirement in regard to packaging, inspection, and sampling, should be specified in the ordering data.

(8) MIL-T-18165A, TUBE AND PIPE, CHROMIUM-MOLYBDENUM ALLOY STEEL, SEAMLESS, 2/28/1955

ASTM A 335-60T, grades P-11 and P-22, are equivalent to military specification MIL-T-18165A, parts 1 and 2, respectively, and could be used for procurement.

The chemical and physical properties requirements are equivalent.

The military specification requires bending and flattening tests from each tube or pipe as rolled while the ASTM specification requires applicable tests on 5% of tubes or pipes from each treated lot.

The ASTM specification requires tensile tests on 5% of pipes in lot, in no case less than two pipes; the military specification requires tensile tests on two pipes per lot.

The military specification requires a minimum wall thickness whereas the ASTM specification requirement is based on a nominal wall thickness. The military specification requires the identification of all tubes and pipes ½ in. O.D. and over, and each length of pipe. This shall be done with recurring symbols printed in ink, at intervals not greater than 3 ft. The symbol is to consist of manufacturer's name or trade mark, and identification A335-60T, grade 11 for class 1, and grade 22 for class 2.

Any specific requirement in addition in regard to packaging, sampling, or inspection should be specified in the ordering data.

(9) MIL-B-16540, BRONZE, PHOSPHOR: CASTINGS, 8/17/1951

ASTM B 143-52, alloy 2B, is equivalent to MIL-B-16540, grade A and B, and could be used for procurement. The chemical requirements are the same except that the military specification requires 0.50% P and a range of 3.0-5.0% Zn while the ASTM specification specifies 0.05% P and a range of 2.5-5.0% Zn.

The military specification requires a minimum tensile of 35,000 psi and minimum elongation in 2 in. of 18% for grade A and 30,000 psi and 12% elongation for grade B, while the ASTM specification tensile requirement for alloy 2B is 36,000 psi and elongation of 18%.

ASTM B143-52, alloy 5A, is equivalent to MIL-B-16540, grade C, and could be used for procurement.

There are some differences in chemical requirements. The military specifies a range of 78.0-86.0% Cu, 2.50-6.0% Sn, 4.0-10.0% Zn, 4.0-8.0% Pb, 0.40% Fe, 1.0% Ni, and 0.05% P, while the ASTM lists a range of 78.0-82.0% Cu, 2.25-3.5% Sn, 7.0-10.0% Zn, 6.0-8.0% Pb, 0.40% Fe, 1.0% Ni, and 0.02% P.

The military specification, grade C, and the ASTM specification B 143-52, alloy 5A, both list 29,000 psi but the elongation of the military specification is 16% where the ASTM specification is 18%.

Any specific requirement, particularly in regard to sampling, packaging, and inspection, should be specified in the ordering data.

(10) QQ-S-633A, STEEL BARS, CARBON, COLD FINISHED AND HOT ROLLED, (GENERAL PURPOSE), 9/22/1949

ASTM A 107-59T, for conditions HR, ANL, NORM, NT, is equivalent to the steels listed in the federal specification QQ-S-633A and could be used for procurement.

QQ-S-633A lists more AISI steel grades than the ASTM specification, but the more frequently used and more readily obtainable are listed in the ASTM specification. However, other AISI grades could be procured if desired by specification in the ordering data.

ASTM A 107-59T lists AISI grades 1008, 1010, 1015, 1016, 1020, 1022, 1025, 1030, 1035, 1040, 1050, 1055, 1060, 1070, 1080, and 1095 for open hearth, basic oxygen, and electric furnace. No silicon content specified under merchant qualities. ASTM A 107-59T lists grades 1109, 1110, 1115, 1117, 1118, 1120, 1137, 1141, 1151, 1211, 1212, and 1213 as open hearth and electric furnace free-cutting steels (no silicon content is specified). Also listed are Bessemer free-cutting steels B1010, B1111, B1112, and B1113, but are not supplied with silicon content. AISI grades up to 1015 exclusive, 1013 to 1025 inclusive, and over, have sulphur content and 1115 to 1151 in free cutting can be supplied with silicon content.

ASTM A 321-59T, covering hot-rolled quenched and tempered (QT) carbon steel bars, is equivalent to federal specification QQ-S-633A and could be used for procurement: rounds, ¼ in. to 9½ in. including diameter; squares, ¼ in. to 5½ in. inclusive; hexagons, ¼ in. and over.

ASTM A 108-59T, covering cold-finished carbon steel bars, conditions CF, CR, CD, ACF, TP, CDGP, TGP, could be used for procurement. The ASTM specification lists the more standard and more readily procured AISI grades 1008, 1010, 1015, 1016, 1018, 1020, 1022, 1025, 1030, 1035, 1040, 1045, 1050, 1095, for open hearth, electric furnace, and free-cutting grades 1115, 1117, 1118, 1137, 1141, 1144, 1151, 1211, 1212, and 1213 (no silicon in preceding list). Also listed are Bessemer grades B1010, and free-cutting grades B1111, B1112, and B1113 (no silicon specified). Other grades as required could be had if specified in ordering data.

ASTM A 311-57T covering stress relief annealed, cold-drawn open-hearth free-cutting carbon steel bars, grades AISI 1137, 1141, 1144, and 1151 of ASTM A 108-59, is equivalent to federal specification QQ-S-633A and could be used for procurement.

Identification markings where required are in accordance with MIL STD 183.

Any specific requirements in regard to packaging, sampling, and inspection should be specified in the ordering data.

New Books . . .

(For New International Recommendations see page 216.)

REAGENT CHEMICALS. AMERICAN CHEMICAL SOCIETY SPECIFICATIONS 1960. OFFICIAL FROM MARCH 1, 1961. ***Prepared by the 1960 Committee on Analytical Reagents. Edited and produced by Applied Publications, American Chemical Society, Washington, D.C. 564 pp. $10.00.***

Many changes in the past few years in the manufacture and testing of reagent chemicals are reflected in this up-to-date edition. Since the 1955 edition which it supersedes, new reagents have been added and in many cases improved methods and instruments specified. One of these is the flame photometer for determination of sodium, potassium, calcium, and strontium.

One of the important additions is a new section, "The Gravimetric Determination of Small Amounts of Impurities" which provides details and precautions of these important procedures.

These quality specifications apply to reagents used in precise analytical work. The book includes definitions, procedures, standards, specifications, and an index.

1960 SUPPLEMENTS TO BOOK OF ASTM STANDARDS. 10 ***parts. Heavy paper covers. American Society for Testing Materials, 1916 Race Street, Philadelphia 3, Pa. $4.00 per part. $40.00 per set.***

Part 1. *Ferrous Metals Specification.* p. 444 pages. Includes 63 standards.

Part 2. *Nonferrous Metals Specifications and Electronic Materials.* 348 pages. Includes 57 standards.

Part 3. *Methods of Testing Metals (Except Chemical Analysis).* 180 pages. Includes 19 standards for mechanical properties, effect of temperature, dosimetry, electrical and magnetic properties, nondestructive testing, metallographic tests, and tests for metal powders.

Part 4. *Cement, Concrete, Mortars, Road Materials, Waterproofing, Soils.* 240 pages. Includes 40 standards.

Part 5. *Masonry Products, Ceramics, Thermal Insulation, Acoustical Materials, Sandwich and Building Construction, Fire Tests.* 238 pages. Includes 44 standards.

Part 6. *Wood, Paper, Shipping Containers, Adhesives, Cellulose, Leather, Casein.* 212 pages. Includes 36 standards.

Part 7. *Petroleum Products, Lubricants, Tank Measurement, Engine Tests.* 320 pages. Includes 41 standards, many of them approved American Standards submitted to ASA through Sectional Committee Z11.

Part 8. *Paint, Naval Stores, Coal and Coke, Aromatic Hydrocarbons, Gaseous Fuels, Engine Antifreezes.* 210 pages. Includes 42 standards.

Part 9. *Plastics, Electrical Insulation, Rubber, Carbon Black,* 494 pages. Includes 68 standards.

Part 10. *Textiles, Soap, Water, Atmospheric Analysis, Wax Polishes.* 334 pages. Includes 46 standards.

Many of the ASTM standards are submitted for approval as American Standard through the Materials and Testing Standards Board of ASA, which works closely with the ASTM Committee on Standards. Also, many of the ASTM committees which develop these standards serve as the U.S. group for work with corresponding technical committees of the International Organization for Standardization.

PRECISION MEASUREMENT AND CALIBRATION. ***National Bureau of Standards Handbook 77. 1961. Three volumes. Vol I, Electricity and Electronics, 845 pages, $6.00. Vol II, Heat and Mechanics, 965 pages, $6.75. Vol III, Optics, Metrology, and Radiation, 1,025 pages, $7.00. (Order from Superintendent of Documents, U.S. Government Printing Office, Washington 25, D.C.)***

The more important National Bureau of Standards publications dealing with precision measurement and the calibration of standards have been compiled in these three volumes to serve as a quick reference source for workers in the field of standards and also as a textbook and aid to scientists and engineers in standards laboratories.

The publications, originally issued as circulars, research papers, chapters of books, and articles in scientific periodicals, were selected for inclusion in the Handbook on the basis that those chosen had best served the needs of scientists in specialized fields of measurement. The list of specific titles included in each volume is given in the Table of Contents of that volume. Because the three volumes are being sold separately, the subject index and authors index are complete and identical in each volume.

RESEARCH HIGHLIGHTS OF THE NATIONAL BUREAU OF STANDARDS, ***Annual Report, 1960, National Bureau of Standards Miscellaneous Publication 237, 189 pages. 65 cents. (Order from Superintendent of Documents, U.S. Government Printing Office, Washington 25, D.C.)***

Presents in compact, digest form an illustrated account of National Bureau of Standards research and measurement activities in fiscal year 1960.

Approximately 225 programs in 18 different fields of research and development are described. Accomplishments reported include determination of an improved value for the faraday; determination of a new value of the atomic weight of silver; development of a high-temperature electric arc for experimental temperature measurements in the region from 10,000 to 20,000 C; calibration of commercial gage blocks to an accuracy of better than one part in five million; and the placing in operation of improved atomic frequency standards.

Some details of a special Bureau program in plasma physics and laboratory astrophysics are given. This program includes studies of the properties of electromagnetic radiation and of particles and their interactions, the results of which relate directly to countless new space age demands for better measurement.

The Bureau reports its efforts and accomplishments in developing precise wavelengths standards for use in length measurement. Improvements were made in measurement of both very high and very low pressures. Aspects of pressure measurement include scales of pressure, standard measurement methods, and precise data on properties of materials at various regions of pressure.

THE EXECUTIVE VIEWPOINT ON STANDARDS. ***Reprinted from the Proceedings of the Eleventh National Conference on Standards, New York, October, 1960. American Standards Association, 10 E. 40 Street, New York 16, N.Y. $1.00.***

Standardization in the corporation; in the chemical industry; how to promote standardization; experience in applying standardization to product design, tooling, and equipment; and the value of standardization to the petroleum industry—these are the subjects discussed by company executives in this 16-page booklet. This unusual compilation, presenting the views of industrial executives on their experience with standards, has been made available in a compact, separate booklet for the benefit of all who are working with standards.

SAMPLE DESIGN IN BUSINESS RESEARCH. ***By W. Edwards Deming. 1960. John Wiley & Sons, Inc, 440 Park Ave, New York, N. Y. $12.00***

Written by one of the pioneers in statistical quality control, this book presents the point of view of the theoretical statistician in industry (the practical man who guides his practice with theory).

Part I establishes standards of professional statistical practice. Parts I and II together provide principles and examples for planning surveys and statistical interpretation of results. Part III discusses some theory useful in sampling.

New methods of sampling, new concepts and operational definitions, and standards of professional statistical practice are the important contributions of this book.

STANDARDS FROM OTHER COUNTRIES

Members of the American Standards Association may borrow from the ASA Library copies of any of the following standards recently received from other countries. Information about those standards not selected for listing in THE MAGAZINE OF STANDARDS may also be obtained from the ASA Library. Orders for these standards may be sent to the country of origin through the ASA office. Titles are given here in English, but, except where otherwise indicated, documents are in the language of the country from which they were received. For the convenience of readers, the standards are listed under their general Universal Decimal Classification number. In ordering copies, please refer to the number following the title of the standard.

620.1 MATERIALS TESTING

Austria (ÖNA)

Drop-weight impact testing machine ÖNORM E 1360

United Kingdom (BSI)

Roughness comparison specimens. Part 1. Ground flat and cylindrical types 2634:Part 1:1960

621.3 ELECTRICAL ENGINEERING

Argentina (IRAM)

Enameled round copper wire for coil winding IRAM 2123

Electrolytic capacitors for motor starting IRAM 2140

Austria (ÖNA)

Standard voltages for three-phase high voltage installation at 50 c/s ÖNORM E 1101

Grounding sign ÖNORM E 1357

Flat copper wire, fiber and paper insulated, 2 stds ÖNORM E 3702 Bl. 1/2

Copper-covered steel wire for overhead lines ÖNORM E 4002

Stranded overhead line of copper covered steel wires ÖNORM E 4003

Galvanized stranded steel wire conductors for overhead lines ÖNORM E 4007

Australia (SAA)

Rules for the electrical equipment of buildings, structures, and premises. Part 1. Wiring methods CC. 1, Part 1-1961

Approval and test spec for electric portable immersion heaters C. 104-1960 Ap.

Approval and test spec for busways (enclosed busbar wiring systems) C. 151-1960 Ap.

Canada (CSA)

Canadian electrical code. Part 2. Essential requirements covering electrical equipment.

Construction and test of flexible metallic conduit and liquid-tight flexible metal conduit C22.2 No. 56-1961

Construction and test of X-ray equipment C22.2 No. 114-1961

Czechoslovakia (CSN)

Mono- and multi-polar terminal board for apparatus CSN 37 1550

Cable channels and supports CSN 38 2156

Overhead line poles, trellis-type for high and low voltage CSN 34 8240

Starting electrolytic capacitors CSN 35 8351

France (AFNOR)

Diagrams for different electrical installations NF C 03-150

Rotating electric machineries, rules NF C 51-100

Household appliances, general rules NF C 73-100

Germany (DNA)

Formula symbols for electric machine construction DIN 40121*

Electric hearing aids; earphone button and earphone receptacle; dimensions DIN 45602*

India (ISI)

Enamelled high-conductivity annealed round copper wire IS:1595-1960

General and safety requirements for light electrical appliances IS:302-1960

Electric ceiling fans and regulators IS:374-1960

Electric fans, table type IS: 555-1960

Steel conduits for electrical wiring IS:1653-1960

Prestressed concrete poles for overhead power lines IS:1678-1960

Netherlands (NNI)

Glossary of terms for transformers and self-induction coils NEN 3164

Rules for removable electrical lighting fittings for domestic use NEN 3229

New Zealand (NZSS)

Standard spec for isolating transformers. Class 2, with metal parts either inaccessible or protected by insulation 1379 Part 2:1960

Spain (IRATRA)

Porcelain insulators for overhead lines, 1000 v and over UNE 21 001

South Africa (SABS)

Low voltage lightning arresters 171-1960

Immersion heaters for portable electric appliances, apparatus-connector type 185-1960

List of electrotechnical terms; group 15: Switchboards and apparatus for connection and regulation 042-15-1959

* Available in English

United Kingdom (BSI)

PVC-insulated cables and flexible cords for electric power and lighting B.S. 2004:1961

Rubber insulation and sheath of electric cables. Part 2. Silicone rubber insulation B.S. 2899:Part 2:1961

Armored PVC-insulated cables B.S. 3346:1961

Copper conductors in insulated cables and cords B.S. 3360:1961

Copper conductors in insulated cables and cords (metric units) B.S 3361:1961

Electric power switchgear and associated apparatus B.S. 162:1961

Fixed ceramic dielectric capacitors grade 2 for use in telecommunication and allied electronic equipment. Part 1. General requirements and tests B.S. 2133B:Part 1:1961

Fixed metallized-paper dielectric capacitors for D.C. operation for use in telecommunication and allied electronic equipment. Part 1. General requirements and tests B.S. 2136:Part 1:1961

Electronic tubes and valves. Part 1. General requirements and tests B.S. 2258:Part 1:1961

Dimensions of plug part and lampholder for capless photoflash lamps B.S. 3337:1961

Capacitors for railway signaling track circuits B.S. 3347:1961

USSR

High-voltage transformers, apparatus, and insulators GOST 1516-60

Electroinsulating varnished cloth (cotton and silk) GOST 2214-60

Electric d-c resistors other than wire-wound. Nominal resistance values GOST 2825-60

Saturant for wires and cables. Technical requirements GOST 3546-60

Porcelain insulating articles for nominal voltages above 500 v GOST 5862-60

Electric cables for electro-filters GOST 6925-60

Heat resisting winding wires GOST 7019-60

Insulating varnishes and enamels, testing for adhesive power GOST 9564-60

621–5 ADJUSTMENT AND CONTROL

Austria (ÖNA)

Rules for designing automatic control ÖNORM M 5950

621.56 REFRIGERATION TECHNOLOGY

Czechoslovakia (CSN)

Data for design of refrigerating systems CSN 14 0341

Germany (DNA)

Household refrigerators, testing of DIN 8950

621.643 CONDUITS, PIPES, JOINTS, FITTINGS

Austria (ÖNA)

Fittings for non-screwed tubes ÖNORM M 1820

Czechoslovakia (CSN)

Reinforced concrete pipes CSN 72 3127

Denmark (DS)

Colors and letters for identification of pipelines DS 134

Germany (DNA)

Copper tube, seamless drawn, dimensions DIN 1754*
Hose for propane/butane DIN 4815*
Tube and piping of rigid PVC, technical delivery specifications DIN 8061*
Tube and piping of rigid PVC, dimensions DIN 8062*
Tube and piping of flexible PE, dimensions DIN 8072*
Tubes and piping of flexible PE, technical delivery specifications DIN 8073*
Tube and piping of rigid PE, dimensions DIN 8074*
Tube and piping of rigid PE, technical delivery specifications DIN 8075*
Seamless copper tubes, dimensions DIN 1754

India (ISI)

Braided spray hose, high pressure, for agricultural purposes IS:1677-1960

Netherlands (NNI)

Seamless steel gas cylinders NEN 2385
Malleable cast iron pipe fittings NEN 3038

Spain (IRATRA)

Steel pipes, screwed, heavy type UNE 19 041

USSR

Precision steel tubes: range GOST 9567-60

Venezuela (NORVEN)

Steel pipes, rigid, varnished, for electric wiring Norven 10—P
Steel pipes, telescoping, galvanized Norven 11—P

621.798 PACKING AND DISPATCH. PACKAGING

Australia (SAA)

All-welded steel drums K.84-1960
Fixed-end and removable-end steel drums K.87-1960

France (AFNOR)

Light wooden crates and baskets for fruits and vegetables, 2 stds NF H 21-002,-024

* Available in English

621.882 SCREW FIXING. BOLTS. NUTS. WASHERS

Australia (SAA)

High-tensile steel bolts with suitable nuts and hardened washers for use in structural friction-grip joints (friction-grip bolts) B. 157-1960

Austria (ÖNA)

Felt washers, strips, and groove rings for roller bearing housings ÖNORM M 6350

Germany (DNA)

Screw threads of metric form; basic tolerances for effective dia DIN 13 Sht.14*
Screw threads of metric form; tolerances for major dia of bolt threads; tolerances for minor dia of nut threads DIN 13 Sht.15*
Snap head rivets for boiler work, sizes 10 to 36 mm dia DIN 123 Sht.1*
Countersunk head rivets, sizes 10 to 36 mm dia DIN 302 Sht.1*
Wing nuts DIN 315*
Eyebolts; metric screw thread DIN 444 Sht.1*
Precision hexagon bolts; metric screw thread, long pattern DIN 609*
Countersunk head rivets; 1 to 9 mm dia DIN 661*
Grub screws, shank threaded screws with hexagon socket and conical point DIN 913*
Screwed studs—for screwing into steel, same thread each end DIN 938 Sht.1*
Retaining washers, multi-tooth lock washers DIN 6797*
Hexagon socket head cap screws; shallow head type with pilot for wrench key DIN 6912*
Screwed sealing plugs with shoulder and external hexagon, light pattern; metric fine screw thread DIN 7604*
Spring-action locknuts DIN 7967*
Lock washers for fillister head cap screws DIN 7980*
Round head screws with recessed head; metric screw thread DIN 7986*
Countersunk head screws with recessed head; metric screw thread DIN 7987*

677 TEXTILE AND CORDAGE INDUSTRY

Argentina (IRAM)

Cotton yarn, sampling and test methods IRAM 7601
Cotton sewing yarn sizes No. 16 to 50, 7 stds IRAM 7620/7

Chile (INDITECNOR)

Terminology 35-1

Denmark

Determination of shrinkage of woven fabrics in high-temperature laundering DS 921
Determination of shrinkage of woven fabrics in mild-temperature laundering DS 922
Method of washing for determining the designation of sizes of hosiery wares DS 924

* Available in English

Colorfastness of textiles to daylight DS 929

France (AFNOR)

Ropes of mixed construction NF G 36-010
Hemp ropes called "chablots" and used specifically for assembling scaffoldings NF G 36-011

India (ISI)

Hair belting yarn IS:1721-1960
Testing jute fabrics for resistance to attack by micro-organism IS:1623-1960
Determination of breaking load of cotton yarn (by constant-rate-of-traverse machine), 2 stds IS:1670/1-1960
Blanket, woolen, dyed IS:1681-1960
Handloom silk bush shirt cloth (loomstate) IS:1686-1960
Handloom silk kara (loomstate) cloth IS:1687-1960
Determination of barium activity number of cotton textile materials IS:1689-1960
Determination of colorfastness of textile materials to nitrogen oxides IS:1690-1960

Netherlands (NNI)

Colorfastness of textiles to decatizing and bleaching, 3 stds NEN 5225/7

United Kingdom (BSI)

Outdoor uniform cloths for fire service, and local authority and hospital staffs BS. 1771:1961
Lines made from cotton and hemp BS. 2019:1961
Method for the determination of stiffness of cloth BS. 3356:1961
Firebrigade rescue lines BS. 3367:1961
Method for the determination of fastness to daylight of coloured textiles 1006:1961
Loom weft forks and grates 3339:1961
Method for the quantitative chemical analysis of binary mixtures of cellulose triacetate and certain other fibres 3344:1961
Pickers for looms 3345:1961
Protective canvas sheets for overhead work (non-corrosive atmospheres) 3349:1961

Venezuela (NORVEN)

Classification of cotton according to grade of purity Norven 8 - P
Sampling of cotton fiber for testing Norven 12 - P
Testing for tensile strength of cotton fiber Norven 13 - P
Fibrographic method for the determination of cotton fiber length Norven 14 - P
Micronnaire test of cotton fiber for fineness Norven 15 - P
Handling of cotton for certification Norven 16 - P
Interpretation of cotton fiber test, provisional std Norven 17 - P
Designation of the direction of twist in textile yarn Norven 18 - P
Designation of left- and right-hand side of a loom Norven 19 - P
Working width of weaving loom Norven 20 - P

NEW INTERNATIONAL RECOMMENDATIONS

ISO Recommendations are published by the International Organization for Standardization, and IEC Publications by the International Electrotechnical Commission, Geneva, Switzerland. Copies are available from ASA.

CALIBRATION OF VICKERS HARDNESS TESTING MACHINES. ISO R. 146. First Edition. February 1960. $1.20.
Applies to the calibration of testing machines for determining Vickers hardness in accordance with ISO R 81, Vickers Hardness Test for Steel.

SHIPBUILDING DETAILS. MARKING OF HATCHWAY BEAMS. ISO R 151. February 1960. First Edition. $0.90.
Drawn up by Technical Committee ISO/TC 8, Shipbuilding Details, this ISO Recommendation is based on Netherlands Standard N 1334, with the addition of a minimum dimension of 500 mm for the distance between the holes in the web of the beam and the extreme end of the beam. The standard designates Marking A to indicate the deck to which the hatchway beam belongs; marking B, the hatchway to which the beam belongs, for a given deck; and marking C, the position of the beam in the hatchway concerned. It also describes how and where the beams are to be marked.

SHIPBUILDING DETAILS. MARKING OF WOODEN HATCHWAY COVERS. ISO R 152. February 1960. First Edition. $0.90.
A Netherlands Standard, N 1333, formed the basis for this international recommendation, and was approved with only minor changes. The markings are to indicate the deck in which the hatchway to be covered is situated, the position of the hatchway in the deck, and the section of the hatchway of which the cover forms part. Colors are assigned to identify the deck and numbers for the position of the hatchway. Lines are used to identify the hatchway section. The size and spacing of the markings are specified.

FLANGING TEST ON STEEL TUBES. ISO R 165. November 1960. First Edition. $0.60.
Drawn up by Technical Committee ISO/TC 17, Steel, with the British Standards Institution holding the secretariat, this recommendation was developed with the cooperation of Technical Committee ISO/TC 5, Pipes and Fittings. The test applies to steel tubes having an external diameter not greater than 150 mm (5.9 in.) and a thickness not greater than 9 mm (0.35 in.).

BEND TEST ON STEEL TUBES. ISO R 167. November 1960. First Edition. $0.60.
Drafts of this recommendation were submitted to Technical Committee ISO/TC 5, Pipes and Fittings, by Technical Committee ISO/TC 17, Steel, as part of the committee's work on the proposal. The test applies to steel tubes in full section, having an external diameter not greater than 60 mm (2.36 in.).

• NEWS BRIEFS

CALLING ATTENTION to the fact that its standardization program has resulted in 14 standards, the Scientific Apparatus Makers Association comments, "Standardization of manufactured products, insofar as it is practical and feasible to develop such quality criteria, has become recognized as a worthwhile goal for today's enlightened manufacturers and purchasers."

SAMA has been actively engaged in a standards program since 1945. Its standards apply in the main to indicating and recording instruments and automatic controls for modern science and industry.

In developing standards, the Recorder-Controller Section of SAMA conducts surveys among the 23 companies that comprise its membership to determine which products and practices require standardization.

Liaison representatives are also appointed to engineering societies and trade associations working on standards concerning indicating, recording, and instrument control.

Six of the standards completed to date by the Recorder-Controller Section are SAMA Standards; eight others are SAMA Tentative Standards. They can be obtained at 25 cents per copy by writing the Recorder-Controller Section, SAMA, 370 Lexington Avenue, New York 17, N.Y.

SAMA Standards

RC 1 Mechanical and Electrical Chart Drive Speeds of Circular Charts
RC 2 Air Pressures for Pneumatic Controllers and Transmission Systems
RC 5 Resistance Thermometers
RC 9 Temperature-emf Relation for Iron-Constantan Thermocouples
RC 10 Locks and Keys for Instrument Cases
RC 11 Mechanical Chart Drives

SAMA Tentative Standards

RC 3 Accuracy and Sensitivity Terminology as Applied to Industrial Instruments
RC 4a Bimetallic Thermometers
RC 6b Filled System Thermometers
RC 7a Liquid-in-Glass Industrial Thermometers
RC 8a Thermocouple Thermometers (Pyrometers)
RC 12 Panel Cut-Out Dimensions
RC 17 Bushings and Wells for Temperature Sensing Elements
RC 18 Markings for Adjustment Means in Automatic Controllers

SAMA is active in the work of ASA Sectional Committees C39 on Electrical Measuring Instruments and C96, Temperature Measurement Thermocouples. The Society's participation in these committees brings to the ASA committees the views of the producers working on SAMA committees and in turn gives SAMA the benefit of the views of users and general interests represented with the producers on ASA committees.

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FRANK H. ROBY, vice-president of the American Standards Association, recently received The Tar Heel Award from the State of North Carolina on behalf of his company. Mr Roby is executive vice-president of the Federal Pacific Electric Company, and received the award because of the contributions being made by the company's Cornell-Dubilier Electronics Division.

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THE STANDARDS and Practices Division of the Instrument Society of America has proposed the Society's Recommended Practice on Color Code for Panel Tubing as the basis for an American Standard. The ISA standard is applicable to any pneumatic tubing within the panelboard, the Society has explained. It includes a color code, methods of color display, and color code identification plate.

It is expected that a general conference will be called to advise ASA on the action to be taken.

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ORLAN W. BOSTON, professor emeritus of mechanical and production engineering, University of Michigan, received a certificate of appreciation from the American Society of Mechanical Engineers at a luncheon May 24. The certificate was presented during the annual Design Engineering Conference of ASME in Detroit. It was in appreciation of the active work devoted by Dr Boston over many years to Sectional Committee B5, Small Tools and Machine Tool Elements. ASME is one of the sponsors of Sectional Committee B5.

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THE FIRST published book containing the information needed to understand and work with the International Organization for Standardization has been made available by the ISO. The book was issued on the occasion of the 1961 General Assembly at Helsinki, Finland, being held June 9-16. ISO plans to issue revised editions annually at the beginning of each year.

A handsome publication, bound in a plastic-coated cover, the book contains lists of the ISO Member-Bodies, the technical committees and subcommittees (in English, French, and Russian), tables showing which countries are participating in which committees, and which hold the secretariats. It also includes numerical lists classified under the UDC system of ISO Recommendations and of Draft ISO Recommendations, and an alphabetical index in English and French.

Copies of the ISO Memento 1961 can be obtained from ASA at $4.80 each.

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FOR THE FIRST TIME, company members and Associate Members of the American Standards Association, as well as Member-Bodies, are to be represented on ASA's Board of Directors and will have a voice in policy-making for the Association. With the approval of the Member-Bodies, ASA's constitution and bylaws have been revised, and its Certificate of Incorporation changed, to make this additional representation possible.

Eighteen new members will be added to the Board effective January 1, 1962. Eight will represent ASA's company members and will be nominated by the Company Member Conference. Four will represent the Associate Members and will be nominated by selected Associate Members. Five additional Member-Bodies and one additional member-at-large will also be named to serve. This increases the Board membership from a total of 23 members—15 Member-Bodies; 3 members-at-large, and 5 ex officio members—to a total of 41 members. The ex officio members are the president, vice-president, chairman, and past-chairman of the Standards Council, and the past-president of ASA.

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THE PHOTOGRAPHIC Manufacturers Group has a new representative on ASA's Standards Council. He is Dr H. C. Yutzy, vice-president of the Eastman Kodak Company, Rochester, N.Y. Dr Yutzy and Paul Arnold, who has long been a member of the Council, will have the responsibility for acting on behalf of the Group on any questions concerning projects or approval of standards that come before the Council. Mr Arnold is assistant to the technical director, Ansco Division, General Aniline and Film Corporation, Binghamton, N.Y.

Dr H. C. Yutzy

Dr Yutzy has been with Eastman since 1936. Before his election as a vice-president early this year, he had done research on the application of physico-chemical methods to the problems of analytical chemistry and on methods of improving photographic emulsions. After serving as head of the emulsion research department, he had been appointed assistant director of the Research Laboratories, and was elected vice-president in February 1961. In this capacity, he is a member of the company's general management and is concerned with the general planning and coordination of the development of new and improved photographic products and related systems. He maintains liaison in these areas between the general management of the company and its various units that conduct photographic development programs in the United States and other countries.

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A PACKAGED SYSTEM of code-punched cards providing current data on the high-temperature strength of metals and alloys is now available from the American Society for Testing Materials. These data are collected and compiled by the ASTM-ASME Joint Committee on Effect of Temperature on the Properties of Metals. Since 1950, the joint committee has offered the data in published form, at intervals. Now, however, the committee announces that it is continuously collecting, compiling, and making the data available. This change in procedure has been necessary because of the increasing need for such data and the rate at which it is generated in high-temperature laboratories.

The cards carry information on chemical composition, heat treatment, microstructure, hardness, short-time tensile properties, original creep and rupture data, and creep and rupture strength. They are punched-coded for selective sorting by material, form, type of test, alloy, producer of the material, and source of data.

For initial distribution, the cards are supplied in Groups of about 25 each:

Group I (not yet available) Light alloys (aluminum, magnesium, titanium, copper, beryllium, lithium, and zirconium)

Group II Iron and steel, including the AISI stainless steels $7.50 for 25 cards

Group III Superalloys, refractory alloys and miscellaneous alloys $7.50 for 25 cards

Miscellaneous Group (Cuts across Groups I, II, and III)

This group is offered now only because the data were collected across the board earlier in the development of the program and represent contributions that should be distributed. $7.50 for 22 cards.

A complete code book with sorting instructions accompanies each set of cards. Cards may be purchased through the American Society for Testing Materials, 1916 Race Street, Philadelphia, Pa.

AMERICAN STANDARDS

Just Published . . .

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ACOUSTICS, VIBRATION, AND MECHANICAL SHOCK

General-Purpose Sound Level Meters, Specification for, S1.4-1961 (Revision of Z24.3-1944) $1.30

Requirements for sound level meters and their calibration to ensure maximum accuracy in any particular sound level meter, and minimum differences in corresponding readings with various makes and models of meters meeting the requirements of this standard.

Sponsor: Acoustical Society of America

BUILDING AND CONSTRUCTION

Door and Frame Preparation for Mortise Door Locks, Specifications for, A115.1-1961 (Revision of A115.1-1959) $0.50

Definitions, location specifications, and drawings giving all dimensional factors significant in mounting of mortise locks in hollow metal doors not less than 1¾ in. thick and mortise lock strikes in hollow metal door frames.

Sponsor: National Builders' Hardware Association

CINEMATOGRAPHY

Dimensions for 65mm Motion-Picture Film, KS-1870, PH22.118-1961 $0.40

Specifies the cutting and perforating dimensions of 65mm motion-picture film.

Dimensions for 70mm Motion-Picture Film, Perforated 65mm, KS-1870, PH22.119-1961 $0.40

Specifies the dimensions of 70mm motion-picture film, perforated 65mm.

Sponsor: Society of Motion Picture and Television Engineers

ELECTRIC AND ELECTRONIC

Schedules of Preferred Ratings for Power Circuit Breakers, C37.6-1961 (Revision of C37.6-1959) $0.80

Lists of preferred ratings for indoor and outdoor power circuit breakers, including voltage, current and interrupting ratings, and insulation levels.

Sponsor: Electrical Standards Board

MATERIALS HANDLING

Freight Containers (Nominal Van Container Sizes), Specifications for, MH-5.1-1961 $1.00

Establishes nominal dimensions for width, height, and length of large freight containers.

Sponsors: American Material Handling Society; American Society of Mechanical Engineers

MECHANICAL

Multiple V-Belt Drives, Specifications for, B55.1-1961 $2.00

Covers V-belt drives for power transmission in industrial application requiring one or more V-belts. They are in the integral horsepower class as distinguished from light-duty fractional horsepower drives. Includes V-belt cross sections and sheave groove sizes designated A, B, C, D, and E.

Sponsors: American Society of Mechanical Engineers; National Machine Tool Builders' Association

Deep-Well Vertical Turbine Pumps, Specifications for, B58.1-1961 (Revision of B58.1-1955) $0.80

Design formulas, nomenclature, dimensional requirements and performance characteristics of line shaft turbine pumps and submersible vertical turbine pumps.

Sponsor: American Water Works Association

SAFETY

Safety Code for Laundry Machinery and Operations, Z8.1-1961 $1.00

Safety requirements for machinery and equipment used in laundries, including washing, extracting, drying and ironing machines.

Sponsors: International Association of Governmental Labor Officials; National Association of Mutual Casualty Companies; Institute of Industrial Launderers

TEXTILES

Method of Testing Felt, ASTM D 461-59; ASA L14.52-1961 (Revision of ASTM D 461-57T; ASA L14.52-1959) $0.30

Method of Test for Micronnaire Reading of Cotton Fibers, ASTM D 1448-59; ASA L14.99-1961 (Revision of ASTM D 1448-56; ASA L14.99-1957) $0.30

Sponsors: American Society for Testing Materials; American Association of Textile Chemists and Colorists

In Process . . .

As of June 12, 1961

BUILDING AND CONSTRUCTION

American Standards Approved

Ceramic Glazed Structural Clay Facing Tile, Facing Brick, and Solid Masonry Units, Specifications for, ASTM C 126-60T; ASA A101.1-1961 (Revision of ASTM C 126-59T; ASA A101.1-1960)

Sponsor: American Society for Testing Materials

Asphalt-Saturated Roofing Felt for Use in Waterproofing and in Constructing Build-Up Roofs, Specifications for, ASTM D 226-60; ASA A109.2-1961 (Revision of ASTM D 226-56; ASA A109.2-1956)

Asphalt-Saturated Asbestos Felt for Use in Waterproofing and in Constructing Build-Up Roofs, Specifications for, ASTM D 250-60; ASA A109.4-1961 (Revision of ASTM D 250-56; ASA A109.4-1956)

Woven Cotton Fabrics Saturated with Bituminous Substances for Use in Waterproofing, Specifications for, ASTM D 173-60; ASA A109.12-1961 (Revision of ASTM D 173-44; ASA A109.12-1955)

Sponsor: American Society for Testing Materials

Refractory Materials, Methods of Chemical Analysis, ASTM C 18-60; ASA A111.2-1961 (Revision of ASTM C 18-52; ASA A111.2-1955)

Sponsor: American Society for Testing Materials

CHEMICAL

In Standards Board

Common Name for the Pest Control Chemical 2-chloro-4-ethylamino-6-isopropylamino-*s*-triazine: atrazine, K62.26-

Common Name for the Pest Control Chemical 2-chloro-4, 6-bis (diethylamino) - *s* - triazine: chlorazine, K62.27-

Sponsor: U.S. Department of Agriculture

CINEMATOGRAPHY

American Standards Approved

35mm Photographic Sound Motion-Picture Film, Usage in Projector, PH22.3-1961 (Revision of PH22.3-1954)

16mm 3000-Cycle Flutter Test Film, Photographic Type, PH22.43-1961 (Revision of PH22.43-1953)

Intermodulation Tests for 16mm Variable-Density Photographic Sound Prints, PH22.51-1961 (Revision of Z22.51-1946)

Nomenclature for Motion-Picture Film Used in Studios and Processing Laboratories, PH22.56-1961 (Revision of Z22.56-1947)

Sponsor: Society of Motion Picture and Television Engineers

American Standard Reaffirmed

A and B Windings of 16mm Film, Perforated One Edge, PH22.75-1953 (R1961)

Sponsor: Society of Motion Picture and Television Engineers

CONSUMER GOODS

American Standard Approved

Liquid Toilet Soap, Specifications for, ASTM D 799-60T; ASA K60.14-1961 (Revision of ASTM D 799-51; ASA K60.14-1952)

Sponsor: American Society for Testing Materials

DRAWINGS, SYMBOLS AND ABBREVIATIONS

American Standard Approved

Guide for Selecting Greek Letters Used as Letter Symbols for Engineering Mathematics, Y10.17-1961

Sponsor: American Society of Mechanical Engineers

ELECTRIC AND ELECTRONIC

American Standards Approved

Single and Heavy Vinyl-Acetal-Coated Round Copper Magnet Wire, C9.5-1961 (Revision of C9.5-1955)

Single and Heavy Vinyl-Acetal Nylon Coated Round Copper Magnet Wire, C9.12-1961

Vinyl-Acetal Self-Bonding Round Copper Magnet Wire, C9.13-1961

Sponsor: National Electrical Manufacturers Association

Wet-Process Porcelain Insulators (Spool (Type), C29.3-1961 (Revision of C29.3-1955)

Wet-Process Porcelain Insulators (Strain Type), C29.4-1961 (Revision of C29.4-1955)

Wet-Process Porcelain Insulators (Low- and Medium-Voltage Pin Type), C29.5-1961 (Revision of C29.5-1955)

Wet-Process Porcelain Insulators (High-Voltage Pin Type), C29.6-1961 (Revision of C29.6-1955)

Wet-Process Porcelain Insulators (High-Voltage Line-Post Type), C29.7-1961 (Revision of C29.7-1955)

Wet-Process Porcelain Insulators (Apparatus-Cap and Pin Type), C29.8-1961 (Revision of C29.8-1957)

Wet-Process Porcelain Insulators (Apparatus-Post Type), C29.9-1961 (Revision of C29.9-1957)

Sponsor: Electrical Standards Board

Fuseholders, Safety Standard for, C33.10-1961

Sponsor: Underwriters' Laboratories

In Standards Board

Electrical Performance of Monochrome Television Studio Facilities, EIA RS-170; ASA C16.32-

Sponsor: Institute of Radio Engineers

Glow Lamps, Method for the Designation of, C78.381-

Glow Lamps, Methods of Measurement, C78.385-

Sponsor: Electrical Standards Board

Mercury Lamp Ballasts (Multiple Supply Type), Specifications for, C82.4-

Mercury Lamp Reference Ballasts, Specification for, C82.5-

Methods of Measurement of Mercury Lamp Ballasts, C82.6-

Series Street Lighting Transformers for Mercury and Incandescent Lamps, Specifications for, C82.7-

Sponsor: Electrical Standards Board

American Standards Reaffirmed

Enamel-Coated Round Copper Magnet Wire, C9.1-1953 (R1961)

Cotton-Covered Round Copper Magnet Wire, C9.2-1953 (R1961)

Silk-Covered Round Copper Magnet Wire, C9.3-1953 (R1961)

Nylon-Fiber-Covered Round Copper Magnet Wire, C9.4-1953 (R1961)

Heavy Vinyl Acetal-Coated Rectangular and Square Copper Magnet Wire, C9.6-1955 (R1961)

Double-Paper Single Cotton-Covered Rectangular and Square Copper Magnet Wire, C9.7-1955 (R1961)

Sponsor: National Electrical Manufacturers Association

Volume Measurements of Electrical Speech and Program Waves, C16.5-1954 (R1961)

Antennas, Methods of Testing, C16.11-1949 (R1961)

Frequency-Modulation Broadcast Receivers, C16.12-1949 (R1961), with supplement C16.12a-1951, Methods of Testing for Effects of Mistuning and Downward Modulation

Vehicular Communications Receivers, Methods of Testing, C16.18-1951 (R1961)

Amplitude-Modulation Broadcast Receivers, Methods of Testing, C16.19-1951 (R1961)

Television Signal Levels, Resolution, and Timing of Video Switching Systems, Methods of Measurement, C16.20-1951 (R1961)

Aspect Ratio and Geometric Distortion of Television Cameras and Picture Monitors, Methods of Measurement, C16.23-1954 (R1961)

Sponsor: Institute of Radio Engineers

Preferred Values for Components for Electronic Equipment, EIA GEN-103; ASA C83.2-1949 (R1961)

Piezoelectric Crystals, Terminology for, 49 IRE 14.S1; ASA C83.3-1951 (R1961)

Fixed Wire-Wound Resistors, Recommendations for, EIA REC-117; ASA C83.6-1955 (R1961)

Variable Control Resistors, Recommendations for, EIA REC-121-B; ASA C83.7-1955 (R1961)

Sponsor: Electronic Industries Association

Reaffirmation Being Considered

Lightweight Shock-Testing Mechanism for Electrical Indicating Instruments, C39.3-1948

Sponsor: Electrical Standards Board

Withdrawal Being Considered

AO 30% Hevea Rubber Compound for Insulated Wire and Cable, C8.17-1954

Sponsor: American Society for Testing Materials

MATERIALS AND TESTING

American Standards Approved

Rockwell Hardness of Plastics and Electrical Insulating Materials, Method of Test for, ASTM D 785-60T; ASA K65.3-1961 (Revision of ASTM D 785-51; ASA K65.3-1959)

Specific Gravity of Plastics, Methods of Test for, ASTM D 792-60T; ASA K65.8-1961 (Revision of ASTM D 792-50; ASA K65.8-1959)

Sponsor: American Scoiety for Testing Materials

MECHANICAL

American Standard Approved

Free-Cutting Brass Rod, Bar, and Shapes for Use in Screw Machines, Specifications for, ASTM B 16-60; ASA H8.1-1961 (Revision of ASTM B 16-58; ASA H8.1-1959)

Sponsor: American Society for Testing Materials

In Standards Board

Carbide Blanks for the Manufacture of Positive and Negative Rake Precision Inserts, Throw-Away Type, B80.1a-(Addendum to American Standard B80.1-1959)

Sponsor: Cemented Carbide Producers Association

METALLURGY

American Standards Approved

Zinc-Coated (Galvanized) Steel Tie Wires, Specification for, ASTM A 112-59; ASA G8.4-1961 (Revision of ASTM A 112-33; ASA G8.4-1935)

Zinc Coating (Hot-Dip) on Iron and Steel Hardware, Specifications for, ASTM A 153-60; ASA G8.14-1961 (Revision of ASTM A 153-59; ASA G8.14-1959)

Sponsor: American Society for Testing Materials

Uncoated Wrought Iron Sheets, Specifications for, ASTM A 162-60T; ASA G23.1-1961 (Revision of ASTM A 162-39; ASA G23-1939)

Sponsor: American Society for Testing Materials

Gray Iron Castings, Specifications for, ASTM A 48-60T; ASA G25.1-1961 (Revision of ASTM A 48-56; ASA G25.1-1956)

Sponsor: American Society for Testing Materials

Nickel-Steel Plates for Boilers and Other Pressure Vessels, Specifications for, ASTM A 203-60; ASA G33.1-1961 (Revision of ASTM A 203-56; ASA G33.1-1956)

Sponsor: American Society for Testing Materials

Mild-to-Medium-Strength Carbon-Steel Castings for General Application, Specifications for, ASTM A 27-60; ASA G50.1-1961 (Revision of ASTM A 27-58; ASA G50.1-1959)

Sponsor: American Society for Testing Materials

High-Strength Steel Castings for Structural Purposes, Specifications for, ASTM A 148-60; ASA G52.1-1961 (Revision of ASTM A 148-58; ASA G52.1-1959)

Sponsor: American Society for Testing Materials

Electrodeposited Coatings of Lead on Steel, Specifications for, ASTM B 200-60; ASA G53.8-1961 (Revision of ASTM B 200-55T; ASA G53.8-1956)
Sponsor: American Society for Testing Materials

MISCELLANEOUS

American Standard Approved

Thermometers, Specifications for, ASTM E 1-60; ASA Z71.1-1961 (Revision of ASTM E 1-60; ASA Z71.1-1960)

Sponsor: American Society for Testing Materials

PHOTOGRAPHY

American Standards Approved

General-Purpose Exposure Meters (Photoelectric Type), PH2.12-1961 (Revision of PH2.12-1957)

Sponsor: Photographic Standards Board

Dimensions for Photographic Flashlamps ASA Type 240, PH3.38-1961
Sponsor: Photographic Standards Board

Temperature and Temperature Tolerances for Photographic Processing Baths, PH4.5-1961 (Revision of PH4.5-1953)

Sponsor: Photographic Standards Board

100-Foot Reels for Processed 16mm and 35mm Microfilm, Dimensions for, PH5.6-1961
Sponsor: American Library Association

Speed Classifications for Intraoral Dental Radiographic Film: Diagnostic Grade, PH6.1-1961

Sponsor: American Dental Association

PIPE AND FITTINGS

American Standards Approved

Standard Strength Unglazed Clay Pipe, Specifications for, ASTM C 261-60T; ASA A106.4-1961 (Revision of ASTM C 261-59T; ASA A106.4-1960)

Clay Pipe, Methods of Testing, ASTM C 301-60T; ASA A106.5-1961 (Revision of ASTM C 301-55; ASA A106.5-1955)

Sponsor: American Society for Testing Materials

Welded and Seamless Steel Pipe, B36.1-1961 (Revision of B36.1-1959)

Welded Wrought-Iron Pipe, B36.2-1961 (Revision of B36.2-1958)

Electric-Resistance-Welded Steel Pipe, B36.5-1961 (Revision of B36.5-1956)

Seamless Steel Boiler Tubes, B36.12-1961 (Revision of B36.12-1959)

Electric-Resistance-Welded Steel and Open-Hearth Iron Boiler Tubes, B36.-13-1961 (Revision of B36.13-1959)

Seamless Alloy Steel Boiler, Superheater, and Heat Exchanger Tubes, B36.17-1961 (Revision of B36.17-1956)

Seamless and Welded Austenitic Stainless Steel Pipe, B36.26-1961 (Revision of B36.26-1956)

Electric-Resistance-Welded Steel Heat Exchanger and Condenser Tubes, B36.32-1961 (Revision of B36.32-1959)

Welded Austenitic Stainless Steel Boiler, Superheater, Heat Exchanger, and Condenser Tubes, B36.33-1961 (Revision of B36.33-1956)

Seamless and Welded Austenitic Stainless Steel Tubing for General Service, B36.37-1961 (Revision of B36.37-1956)

Seamless Austenitic Chromium-Nickel Steel Still Tubes for Refinery Service, B36.39-1961 (Revision of B36.39-1956)

Seamless and Welded Steel Pipe for Low-Temperature Service, B36.40-1961 (Revision of B36.40-1959)

Seamless and Welded Steel Tubes for Low-Temperature Service, B36.41-1961 (Revision of B36.41-1959)

Seamless Ferritic Alloy Steel Pipe for High-Temperature Service, B36.42-1961 (Revision of B36.42-1956)

Sponsors: American Society of Mechanical Engineers; American Society for Testing Materials

AMERICAN STANDARDS PROJECTS

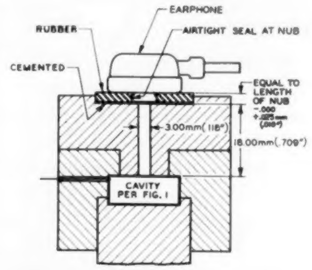
American Standard Methods for Measurement of

Electroacoustical Characteristics of Hearing Aids

ASA
Reg. U. S. Pat. Off.
S3.3-1960
Revision of
Z24.14-1953
UDC 681.88:534.6

Erratum

In Fig. 3, Type HA-2 Coupler, on page 9, the dimensions of the coupler tube are incorrect. They should be as shown in the corrected figure below.



April 28, 1961

Safety Code for Power Presses and Foot and Hand Presses, B11—

Sponsor: National Safety Council

LeRoy A. Faulkner has succeeded the late Henry Duffus as chairman of Sectional Committee B11. Mr Faulkner is supervisor of Industrial Plant Service, Liberty Mutual Insurance Company, Boston, Massachusetts, and is past chairman of the Engineering Committee of the National Safety Council's Power Press Section. He serves as technical consultant to many trade association and professional society safety activities, and has participated in the development of a number of American Standards. Mr Faulkner is author of technical papers and articles on power press safety as a contribution to text books and other reference material for the pressed steel industries. (See report on new edition of American Standard B11.1-1960, page 204).

LeRoy A. Faulkner

First meeting of Sectional Committee MH6 (around table, left to right): J. G. Mulder, (with hand to face), Photographic Standards Board; R. K. Hopkins, Sr. American Material Handling Society; A. B. Engel, American Material Handling Society; P. H. Paulsen, American Institute of Marine Underwriters; F. J. Norton, REA Express Company; R. H. Macomber, Society of Packaging and Handling Engineers, Chairman, MH6; F. F. Diasio, U. S. Army; H. F. Mayers, Joint Electronic Device Engineers Committee; J. A. Field, Packaging Institute; H. H. Hall, ASA Sectional Committee MH5, Freight Containers; J. W. McNair, ASA technical director; V. G. Grey, ASA staff.

Pictorial Handling Markings for Nondangerous Goods, MH6—

Sponsors: American Material Handling Society; Society of Packaging and Handling Engineers

At a meeting on May 5, the sectional committee was formally organized, with Robert H. Macomber of the Insurance Company of North America as chairman. Mr Macomber represents the Society of Packaging and Handling Engineers. The scope of the project will be standardization of pictorial markings applied to shipping containers of non-dangerous goods to indicate special handling requirements.

A subcommittee is being formed to study the various pictorial markings that have been proposed, both in this country and internationally. The subcommittee will also consider other markings that might be appropriate in order to develop American Standard recommendations.

TWELFTH NATIONAL CONFERENCE ON STANDARDS,

Rice Hotel, Houston, Texas, October 10-12, 1961. See you there!

Organization meeting of Sectional Committee MH8 (around table, left to right): R. H. Macomber, Insurance Company of America, (Society of Packaging and Handling Engineers); W. E. Willey, U. S. Post Office Department, Office of Research and Engineering; Russell Hastings, Clark Equipment Company (Industrial Truck Association); H. H. Hall, coordinator and chairman, Sectional Committee MH5, Freight Containers; J. W. McNair, technical director, ASA; V. G. Grey, staff engineer, ASA; J. B. Hulse, Truck Trailer Manufacturing Association; A. B. Engel, Ferdon Equipment Company (American Material Handling Society), Secretary, MH8; R. K. Hopkins, Sr, General Electric Company, Newark, N. J. (chairman, American Material Handling Society's standards committee), Chairman, MH8; J. M. Roop, Society of Automotive Engineers; W. C. Humphreys, New York Central Railroad (American Railway Engineering Association); A. R. Mitton, New York Central Railroad (AREA).

Dimensions of Rail and Motor Freight Docks, MH8—

Sponsor: American Material Handling Society

Committee MH8 met for the first time on May 5. Richard K. Hopkins, Sr, national chairman of the standards committee of the American Material Handling Society will serve as chairman, with A. B. Engel, also representing AMHS, as secretary.

Three subcommittees were set up and chairmen appointed:

Railroad Dock Requirements – William C. Humphreys, architect for the New York Central Railroad, representing the American Railway Engineering Association

Motor Freight Dock Requirements—Richard K. Hopkins, Sr, Newark Lamp Plant, General Electric Company

Material Handling Equipment Requirements – Russell Hastings, Clark Equipment Company, representing the Industrial Truck Association.

Plastering, A42—

Sponsors: American Society for Testing Materials; American Institute of Architects

Max Barth, chief of the Technical Division, Office of the Assistant Secretary of Defense (Installations and Logistics), has been named chairman of Sectional Committee A42. Mr Barth succeeds the late Theodore Irving Coe who served as chairman for many years.

A Master of Architecture from the University of Pennsylvania, Mr Barth is a registered architect in New Jersey, Pennsylvania, Maryland, the District of Columbia, and Illinois. He has served as instructor of architectural design, graphics, and architectural history at Washington State University, and in his private work has designed residences, schools, hospitals, and public buildings. He has had approximately 26 years of Government service. During that time he worked with the Public Building Branch of the Treasury Department, and with the Department of the Army and Department of Defense.

Max Barth

Mr Barth works as a member of ASTM Committee C-11, Gypsum, and of ASTM Committee C-15, Structural Clay Products. He is an honorary member of Producers' Council.

Cast Iron Pipe and Fittings, A21—

Sponsors: American Gas Association; American Society for Testing Materials; American Water Works Association; New England Water Works Association

Sectional Committee A21 is attempting to pass its first major hurdle in bringing American Standards for cast-iron pipe up to date, reports Edwin B. Cobb, the committee's new chairman. Mr Cobb is a partner in the Boston firm of engineers, Metcalf & Eddy. The first hurdle to which Mr Cobb refers is obtaining approval from the committee's four sponsors of two revised specifications for cast-iron pipe centrifugally cast for water. [1]

As soon as these two standards are approved, revised specifications for cast-iron pipe centrifugally cast for gas [2] will be submitted to the sponsors, Mr Cobb says.

In addition, a revision of American Standard A21.10-1952 [3] is rapidly nearing completion in the hands of a subcommittee. Another subcommittee is working on revisions of A21.4-1953 covering pipe linings.

Mr Cobb hopes that these revisions can all be completed promptly so they will be available for use in the near future. Some of the revisions are badly needed to match changes in manufacturing process, he points out.

Mr Cobb is a Fellow of the American Society of Civil Engineers and chairman of its Membership Local Qualifications Committee. He has served as president and director of the Boston Society of Civil Engineers, and as a director of the New England Water Pollution Control Association. He is a member of ASA Sectional Committee B58, Deep Well Vertical Pumps. He has been chairman of the Committee on Specifications for Prestressed Concrete Tanks of the New England Water Works Association since 1958. In addition to membership in local, regional, and national associations working on engineering

[1] The standards being revised are A21.6-1953, Cast Iron Pipe Centrifugally Cast in Metal Molds for Water or Other Liquids (AWWA C106), and A21.8-1953, Cast Iron Pipe Centrifugally Cast in Sand-Lined Molds. for Water or Other Liquids (AWWA C108).

[2] These will be revisions to A21.3-1953, Cast Iron Pit Cast Pipe for Gas, and A21.7-1953, Cast Iron Pipe Centrifugally Cast in Metal Molds for Gas.

[3] Short-Body, Cast Iron Fittings, 3-Inch to 12-Inch, for 250-psi Water Pressure plus Water Hammer (AWWA C111).

problems concerned with water, Mr Cobb is a member of the British Institute of Water Engineers.

Mr Cobb started his career with J. J. Van Valkenburg, one of the early sanitary engineers of New England. Since then he has worked as an engineer on many local and district water and sewage projects and during the last war, with the Navy, on water and sewage works in the Central Pacific and on the China Coast. Since joining the firm of Metcalf & Eddy, he has been in charge of such important work as the Allegheny County Sanitary Authority sewage works, and the preliminary design for bringing Lake Huron water to Flint, Michigan.

Mr Cobb succeeds Thomas H. Wiggin who has retired from the chairmanship of Sectional Committee A21 at the age of 87 after serving for 34 years. Mr Wiggin helped launch the A21 project in 1926 and was largely responsible for the fact that the standards developed by the committee have been based on the results of research. Under Mr Wiggin's guidance, the committee was responsible for research projects to determine the effect on cast-iron pipe of the combined pressures of earth loads from the outside and of water from the inside. The American Standard Manual for the Computation of Strength and Thickness of Cast-Iron Pipe, A21.1-1939, was based on this research. Tests to find out what it takes to burst or crush a certain size cast-iron pipe, to what extent the pressure of water is reduced when passing through the pipe fittings, and what is the pull-out strength of lead joints were also part of the committee's program.

Edwin B. Cobb

In 1955, Mr Wiggin, Sectional Committee A21, and Mr Wiggin's relationship to the committee were memorialized in a booklet published by the American Standards Association entitled "A Long Labor of Love."

STANDARDS ALIVE

A Guest Column

by ARTHUR T. GREEN

CONCEPTS OF GOOD STREET LIGHTING change frequently. Each new idea produces a host of variations, some less expensive, some prettier, and many—just different. This need for expression must be recognized. Sales and promotional men can't sell "standing still" or "just as good." On the other hand, they often think that to standardize means "to freeze." So efforts to standardize street lighting luminaires are sometimes met with, "You can't stand in the way of progress." This idea needs correction.

Concepts of the meaning of standards also change from time to time, and vary widely. To some, a standard is a complete and final package. This idea also needs to be checked.

Good, modern, national voluntary standards never stand in the way of progress. They provide interchangeability so that the latest, the best, the lowest-cost units can be substituted for the old, the broken, or obsolete. They encourage experimentation through high salvage value of standard parts. They provide manufacturers with a nationwide outlet for mass-produced parts and give users a good choice of competitive suppliers. But inflexible men, local company rules, or poorly administered codes can materially slow desirable changes. Failure to adopt new national standards can also hold back users who look to such standards for guidance.

EEI-NEMA standards for interchangeable parts of luminaires for filament lamps and vertical-burning mercury lamps have done much to simplify and unify street lighting practices. They have permitted a wide choice of light patterns, appearances, and other variables, with benefits to manufacturers and users alike. Their general acceptance has not stopped a trend toward other good ideas—a luminaire for horizontal-burning mercury vapor lamps and other different types of "nonstandard" street lighting.

Standards for glassware or optical assemblies for these new luminaires have met resistance. Some feel that national standardization of shape or size of reflectors or glass at this stage of development would stifle progress. A recent questionnaire, however, shows that lack of national standards is resulting in many different local company standards and in purchasing from only two or three suppliers. This may be more likely to freeze designs and stop progress than would a national standard.

Modern, voluntary national standards, developed by representatives of users and manufacturers working together, define, to mutual satisfaction, the limit of variations that can be produced and used to best advantage. A common language is worked out and standards become a matter of common sense. These standards can be tight or broad depending on mutual needs. Their use will depend on their value, but the standards themselves will not "stand in the way of progress" nor will they provide the one and only answer to all problems.

The idea of standards as the basis of mass production is generally accepted. But for our dynamic American industry we need a better understanding of the concept of standards as alive, and as permitting both mass production and progress.

Mr Green is chairman of the EEI representatives of the Edison—Electric Institute—National Electrical Manufacturers Association Joint Committee on Standardization of Street Lighting Equipment.